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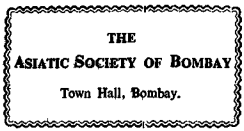

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CATALOGUE

OF

SHIELD REPTILES

IN

THE COLLECTION

OF

THE BRITISH MUSEUM.

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PART I.

TESTUDINATA (TORTOISES).

BY

JOHN EDWARD GRAY, F.R.S. &c.

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INTRODUCTION.

THE chief object in preparing the present Catalogue has been to give at one view a complete account of all the species of the Shielded Reptiles (*Cataphracta*) now in the British Museum, and of those species known to exist in other Cabinets, but which are at present desiderata in the Museum, to enable travellers, collectors and others to assist in completing the national collection.

An indication of the separate locality of each specimen is given; its sex and state are also noticed.

The figures of the new species contained in the Museum Collection have been drawn on stone by Mr. Ford, so well known for the beauty and accuracy of his pencil.

JOHN EDWARD GRAY.

British Museum, December 1, 1855.

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CATALOGUE

OF

SHIELD REPTILES.

Sect. II. SHIELDED REPTILES (CATAPHRACTA).

Body covered with square imbedded plates, generally forming a dorsal and ventral shield. The bones of the skull thick, united together into a hard mass, and including the quadrate bones and pterygoid processes. The tongue is short, affixed to the mouth, scarcely exsertible. The lungs are enveloped by a thick peritoneum, which performs the part and has the appearance of a diaphragm. The vent is round or linear, plaited. The male organ and vagina are simple, the former having only a groove along its upper edge. Oviparous: the egg covered with a hard shell: the young, when hatched, having a large umbilical slit, which soon disappears.

Reptilia Cataphracta (Shielded Reptiles), *Gray, Syn. Rept.* 2 (1831); *Ann. Nat. Hist.* i. 275 (1838); *Cat. Tort. B.M.* (1844).

Reptilia Loricata et Squamata (part.), *Gray, Ann. Phil.* (1825).

Order III. CHELONIA (TORTOISES).

The body enclosed in a case, formed of two shields united by their margins, and leaving only the head, neck, limbs and tail free, which are covered with a scaly skin: the upper shield or thorax formed of the ribs more or less dilated on the sides, united together and adherent to the dorsal vertebræ by a toothed suture, preventing any motion; they are surrounded by a series of bones forming the edge of the shields: the lower shield or sternum is formed of four pair and a central anterior bone. The jaws are toothless, covered with a horny bill, rarely hid by fleshy lips: the upper bill covers the lower like a box. Eyes with distinct eyelids. The drum of the ear visible, nearly superficial. The legs short, thick. Tail conical. The vent is a circular hole.

Chelonia (Chelonians), *Gray, Ann. Nat. Hist.* i. 275 (1835); *Cat. Tort. B.M.*

Tortues ou Cheloniens, *Dum. & Bib. Erp. Gén.* ii. 1 (1835).

Testudinata, *Oppel, Reptilien*, 1811.
Bell, Zool. Journ. ii. 513.
Bonap. Saggio Anim. Vert. 5. 12 (1832).
Fitz. Syst. Rept. 29 (1843).

Chelonii, *Latr. Rept.*
Gray, Ann. Phil. (1825); *Syn. Rept.* 3 (1831).
Bonap. Saggio Anim. 5. 12 (1832).
Eichwald, Zool. Spec. iii. 194.

Chelonea, *Fleming, Phil. Zool.* ii. 268 (1822).

Sterrichrotes (Chelonii), *Ritzen, Nov. Act. Acad. Nat. Cur.* xiv. 269 (1828).

Les Cheloniens (Chelonii), *Brongn. Bull. Soc. Philom.* xxxv. (1808).
Cuv. R. A. ii. 6; ed. 2. ii. 5; *Oss. Foss.* v.
Latr. Rept.
Blainv. Bull. Soc. Philom. (1816).
Geoff. Ann. Mus. xiv. 5.
Wiegmann & Ruthe, Handb. Zool. 163.

Testudinata, *Fitz. Syst. Rept.* 29 (1843).

Testudines (Hedreoglossæ), *Wagler, Syst.* 133 (1830).

Fornicati, *Haworth, Phil. Mag.* (1823).

Chelonia, *Gray, Cat. Rept. B.M.* 3.

Oppel, in his *Ordnungen, Familien u. Gattungen der Reptilien* (1811), divides the Tortoises (*Testudinati*) thus :—
I. Chelonii. 1. *Chelonia*. II. Amydæ. a. 2. *Trionyx*. b. 3. *Chelys*. 4. *Testudo*. 5. *Emys*.

M. Cuvier, *Règne Animal*, ii. 9 (1817), divides the Cheloniens or Testudo, Linn., thus :—

1. Tortues de terre (*Testudo*). 2. * Les Tortues d'eau douce (*Emys*). ** Les Tortues à boîte. 3. Tortues de mer (*Chelonia*). 4. Les Chelides ou Tortues à gueule (*Chelys*). 5. Les Tortues molles (*Trionyx*).

The same arrangement is followed in the Second Edition, ii. 8, and he has added the generic names which have been given by Fleming, Bell and others to his sections of Brongniart's genera.

Merrem, *Tent. Syst. Amphib.* (1820), divides the Testudinata thus :—

* Pedibus pinniformibus. 1. *Caretta*. 2. *Sphargis*. ** Pedibus digitatibus. 3. *Trionyx*. 4. *Testudo*. * *Matamata*. ** *Emys*. *** *Terrapene*. **** *Chersina*.

Dr. John Fleming, in the *Philosophy of Zoology* (1822), where he named many of the sections indicated by Cuvier in his *Animal Kingdom*, arranges the Cheloneæ thus :—

* Cavity with a lid. A. Lips corneous. 1. *Cistuda*. ** Cavity without a lid. 2. *Testudo*. 3. *Emys*. 4. *Chelonura*. 5. *Chelonia*. 6. *Corîudo*. B. Lips fleshy. 7. *Chelys*. 8. *Trionix*.

M. Latreille, in the *Fam. Nat. du Règne Animal*, 91 (1825), divides the Order Chelonii thus :—

Fam. I. Cryptopodes. 1. *Tortue*. 2. *Emyde*. 3. *Terrapene* (Tortue à boîte). II. Gymnopodes. * Carapace écailleuse et solide. 4. *Saurochelyde* (Tortue à longue queue). 5. *Chelonée*. 6. *Chelys*. ** Carapace molle. 7. *Trionyx*.

Dr. Gray, in the *Annals of Philosophy for 1825*, proposed the following arrangement :—

I. *Feet and head retractile into the carapace. Carapace solid, covered with horny scales.* Cryptopodi.

Fam. I. Testudinidæ. 1. *Testudo*. II. Emydidæ. * *Beak horny; sternum entire.* Emydina. 1. *Emys*. ** *Beak horny; sternum transversely sutured.* Terraphenina. 2. *Terraphene*. 3. *Sternotherus*. 4. *Kinosternon*. *** *Beak fleshy.* Chelidina. 5. *Chelys*.

II. *Feet and head not or only partly retractile into the carapace. Carapace mostly soft.* Gymnopodi.

Fam. III. Trionicidæ. 1. *Trionyx*. IV. Sphargidæ. 1. *Sphargis*. V. Cheloniadæ. 1. *Chelonia*.

Mr. T. Bell, in his paper on the Characters of the Order, Families and Genera of the Testudinata (*Zool. Journ.* iii. 513, 1828), divides the Order thus :—

A. Digitata. Fam. I. Testudinidæ. 1. *Testudo* (graeca). 2. *Pyxis* (arachnoides). 3. *Kinixys* (Homeana). II. Emydidæ. a. *Sterno mobili*. 1. *Terrapene* (clausa). 2. *Sternothærus* (Leachianus). 3. *Kinosternon* (longicaudatum). b. *Sterno solido*. 4. *Hydraspis* (galeata). 5. *Emys* (picta). 6. *Chelonura* (serpentina). 7. *Chelys* (fimbriata). III. Trionychidæ. 1. *Trionyx* (Coromandelicus).

B. Pinnata. IV. Sphargidæ. 1. *Sphargis* (mercurialis). V. Cheloniadæ. 1. *Chelonia* (Mydas).

Dr. F. A. Ritzen, in his *Natur. Eith. Amph., Nova Act. Acad. Nat. Cur.* xiv. (1828), proposes the following arrangement :—

I. Sterrichrotes, Chelonii. A. Eretmochelones. Halichelones. a. *Mydæ*. 1. *Sphargis*. b. *Carettæ*. 2. *Chelone*. II. Phyllopodochelones. B. Chersydrochelones. * *Amydæ*. 1. *Chelonia*. 2. *Trionyx*. 3. *Matamata*. 4. *Emys*. C. Podochelones. *a*. Chersochelones. *Dysmydæ*. 1. *Clemmys*. 2. *Terrapene*. 3. *Chersine*.

Dr. John Wagler, in the *Naturliches System der Amphibien* (1830), divides the Order Testudines (p. 133) thus :—

I. Testudines diacopodes. 1. *Chelonia*. 2. *Dermatochelys*. 3. *Aspidonectes*. 4. *Trionyx*. 5. *Chelys*. 6. *Rhinemys*. 7. *Hydromedusa*. 8. *Podocnemis*. 9. *Platemys*. 10. *Phrynops*. 11. *Pelomedusa*. 12. *Chersina*. 13. *Clemys*. 14. *Staurotypus*. 15. *Pelusias*. 16. *Cinosternon*. 17. *Emys*. II. Testudines tylopodes. 18. *Cinixys*. 19. *Pyxis*. 20. *Chersens*. 21. *Testudo*.

Dr Gray, in the *Synopsis Reptilium*, Part i. (1831), divides the Chelonii thus :—

Fam. I. Testudinidæ. 1. *Testudo*. 2. *Chersina*. 3. *Kinixys*. 4. *Pyxis*. II. Emydæ. 5. *Cistuda*. 6. *Emys*. 7. *Kinosternon*. 8. *Chelydra*. III. Chelydæ. 9. *Sternotherus*. 10. *Chelodina*. 11. *Hydraspis*. 12. *Chelys*. IV. Trionycidæ. 13. *Trionyx*. 14. *Emyda*. V. Cheloniadæ. 15. *Sphargis*. 16. *Chelonia*.

Wiegmann and Ruthe, *Handbuch der Zoologie* (1832), divide the Order Chelonii thus into families :—

Fam. I. Cheloniæ. 1. *Sphargis*. 2. *Chelonia*. II. Chersinæ. 1. *Testudo*. III. Emydæ. 1. *Emys*. 2. *Chelydra*. 3. *Cinosternon*. IV. Chelydæ. 1. *Chelys*. V. Chilotæ. 1. *Trionyx*.

M. Charles Bonaparte, in his *Systema Generale d'Erpetologia*, 80 (1832), divides the TESTUDINATA thus :—

Order I. CHELONII. Fam. I. TESTUDINIDÆ. 1. *Testudinina*. 2. *Chelina*. II. TRIONICIDÆ. III. CHELONIIDÆ. 1. *Sphargidina*. 2. *Chelonina*.

Messrs. Duméril and Bibron (*Erp. Gén.* ii. 1835) divide the TORTOISES OR CHELONIENS thus :—

I. LES CHERSITES OU TORTUES TERRESTRES. 1. *Tortue*. *a*. Cherseus. *b*. Tortues. *c*. Chersine. 2. *Homopode*. 3. *Pyxide*. 4. *Cinixys*. II. LES ELODITES OU TORTUES PALUDINES. A. Cryptodères. 5. *Cistude*. *a*. Clausiles. *b*. Baillantes. 6. *Emyde*. *a*. Européennes. *b*. Américaines. *c*. Africaines. *d*. Indiennes. 7. *Tetronyx*. 8. *Platysterne*. 9. *Emysaure*. 10. *Staurotype*. 11. *Cinosterne*. B. Pleurodères. 12. *Peltocephale*. 13. *Podocnemide*. 14. *Pentonyx*. 15. *Sternothere*. 16. *Platemyde*. 17. *Chelodine*. 18. *Chelyde*. III. LES POTAMITES OU TORTUES FLUVIALES. 19. *Gymnopode*. 20. *Cryptopode*. IV. LES THALASSITES OU TORTUES MARINES. 21. *Chelonée*. *a*. C. franches. *b*. C. imbriquées. *c*. C. caouanes. 22. *Sphargis*.

M. Charles L. Bonaparte, in his *Tavola Analitica dei Chelonii* (1836), divides the CHELONII into three families :—

I. TESTUDINIDI. *a*. Testudinini. *b*. Emidini. *c*. Hydraspedini. *d*. Chelini. II. TRIONICIDI. *a*. Trionichini. III. CHELONIDI. *a*. Chelonini. *b*. Spargidini.

The following is the *Specchio dei Generi e Sottogeneri* :

I. TESTUDINIDÆ. 1. Testudinina. 1. *Cherseus*. 2. *Testudo* (*Testudo, Peammobates, Geochelone, Chelonoidis*). 3. *Chersina* (*Oylindraspis, Chersina*). 4. *Homopus*. 5. *Pyxis*. 6. *Kinixys* (*Cinothorax, Cinixys*). 2. Emydina. 7. *Cistudo*. 8. *Emys* (*Emys, Cyclemis*). 9. *Terrapene* (*Clemys, Rhinoclemys*). 10. *Geomys*. 11. *Tetronyx*. 12. *Platysternon*. 13. *Chelydra*. 14. *Staurotypus*. 15. *Kinosternum* (*Sternotherus*, Cinosternon). 3. Hydraspidina. 16. *Peltocephalus*. 17. *Podocnemys*. 18. *Emydura* (*Macoquaria*). 19. *Pelomedusa*. 20. *Pelusios*. 21. *Hydraspis* (*Platemys, Rhinemys, Phrynops*). 22. *Chelodina* (*Chelodina, Hydromedusa*). 4. Chelina. 23. *Chelys*. II. TRIONYCIDÆ. 5. Trionicina. 24. *Amyda* (*Aspidonectes, Platypeltis, Pelodiscus, Amyda*). 25. *Trionyx*. III. CHELONIDÆ. 6. Chelonina. 26. *Chelonia* (*Chelonia, Caretta*). 27. *Thalassochelys*. 7. Sphargidina. 28. *Sphargis*.

Dr. J. E. Gray (*Ann. Nat. Hist.* 1838, i. 275) proposed a new arrangement of Reptiles with short characters, thus :—

I. SQUAMATA. 1. *Saura*. 2. *Ophidia*. II. CATAPHRACTA. 3. *Amphisbenæ*. 4. *Chelonia*. 5. *Emydosaura* ;—

and he points out the analogies between this order and those of Mammalia and Birds.

Swainson, in *Lardner's Cabinet Cyclopædia* (1839), p. 343, arranges these animals thus :—

Order I. EMYDOSAURES (*Crocodiles*). Ord. II. CHELONIDES (*Tortoises*). Fam. I. CHELIDRIDÆ (*Crocodile Tortoises*). 1. *Chelydra*. 2. *Platysternon*. 3. *Chelys*. II. TESTUDINIDÆ (*Land Tortoises*). 4. *Testudo*. 5. *Chersina*. 6. *Honopus*. 7. *Pyxis*. 8. *Kinixys*. III. EMYDÆ (*River Tortoises*). 9. *Cistuda*. 10. *Emys*. 11. *Kinosternon*. * *Sternotherus*. 12. *Chelodina*. 13. *Hydraspis*. IV. TRIONYCIDÆ. 14. *Trionyx*. 15. *Emyda*. V. CHELONIDÆ. 16. *Chelonia*. 17. *Sphargis*.

Dr. Fitzinger (*Systema Reptilium*, p. 29, 1843) divides the TESTUDINATA thus :—

Order I. TYLOPODA. Fam. I. TESTUDINES. 1. *Cinixys*. 2. *Chersina*. 3. *Testudo*. Order II. STEGANOPODA. § 1. Rostrata. Fam. I. EMYDÆ. 1. *Emys*. 2. *Clemmys*. 3. *Chelydra*. 4. *Staurotypus*. 5. *Cinosternon*. Fam. II. HYDRASPIDES. 1. *Hydraspis*. § 2. Mandibulata. Fam. I. CHELYDÆ. 1. *Chelys*. § 3. Labiata. Fam. I. TRIONYCHES. 1. *Trionyx*. 2. *Aspidonectes*. Order III. OIACOPODA. Fam. I. CHELONIÆ. 1. *Chelonia*. 2. *Thalassochelys*. Fam. II. DERMATOCHELYDÆ. 1. *Dermatochelys*.

F. I. C. Mayer (*System des Thierreichs*, 189, 1849 ; *Wiegmann's Arch.* 1850, 67) arranges the TYLOPODA or Chelonians thus :—

1. Bœnodactyli (*Testudo*). 2. Eressodactyli (*Emys, Trionyx*). 3. Pterodactyli (*Chelonia*).

The upper shield or *carapace* is formed by the ribs (eight pairs), enlarged and united together and to the annular part of the dorsal vertebra by toothed sutures, so as to be immoveable; the lower shield or plastron is formed of the pieces which represent the chest bone (usually nine), and a circle of bones analogous to the sternal cartilages of quadrupeds. The vertebræ of the neck and tail alone are moveable. The two long envelopes are immediately covered with skin or scales, and surround the muscles of the extremity.—*Ann. Phil.* 1825.

The bones of the sternum are in general united together into a single plate, and are often affixed to the margin by a toothed suture, but in the *Cistudæ* they are united to it by a cartilaginous band allowing of a slight motion; and sometimes, as in the Box Tortoise, the sternum is divided into two or three parts by one or two cross sutures, allowing the front or hinder lobe, or both, to move on the middle or fixed part. In the genus *Chelydra*, and the families *Trionycidæ* and *Cheloniadæ*, the sternal bones form a ring, leaving a cartilaginous space in the centre.

SYNOPSIS OF THE FAMILIES.

A. *Digitate.*

a. *Back with horny scales.*

1. TESTUDINIDÆ. Feet club-shaped; claws 5–4 or 4–4, blunt. Caudal shields united into one, incurved. Neck retractile.
2. EMYDIDÆ. Feet palmated; claws 5–4 or 4–4, acute. Caudal shields separate. Neck retractile. Pelvis attached to the vertebræ only. Sternal shields 11 or 12.
3. CHELYDIDÆ. Feet palmated; claws 5–4 or 5–5, acute. Caudal shields separate. Neck contractile. Pelvis attached to the vertebræ and sternum. Sternal shields 13.

b. *Back with soft skin.*

4. TRIONYCIDÆ. Feet palmated; claws 3–3, acute. Bones covered with a soft skin having a flexible margin.

B. *Pimate.*

5. CHELONIADÆ. Feet fin-shaped, compressed.

A. Digitata. *Feet digitate.*

Tortue de terre, *Daubenton, Ency. Méth.* 689.
Amydæ, *Oppel, Rept.* 4, 6, 9 (1811).
Land and Freshwater Tortoises, *Shaw, Zool.* iii. 9.
Testudo digitata, *Merrem, Tent.* 20.
Testudines steganopodes et T. tylopodes, *Wagler, Syst.* 138 (1830).
Podochelones, *Ritzen, Nov. Act. Nat. Cur.* xiv. 270 (1828).

a. Leptonota. *Back covered with hard horny scales. Toes digitate, 4- or 5-clawed.*

Testudo, *Merrem, Tent.* 21.
Amydæ β, *Oppel, Rept.* (1811).

* Tylopoda. *Feet clavate.*

Testudines terrestres, *Plin.*
Testudo (Tortues de terre), *Brongn., Cuvier.*
Test. Tylopoda, *Wagler.*

Fam. I. TESTUDINIDÆ (LAND TORTOISES).

Head ovate, shielded; jaws naked; nostril apical. Neck retractile into the cavity of the shell. Feet short, club-shaped, armed with blunt claws. Shell very solid, thick, ovate, the ribs united together to the margin, in the adult state covered with horny concentrically grooved shields, marked with a permanent areola; marginal plates 24 to 26, the caudal pair always united together into one broad generally incurved plate. Sternum broad and solid, closed in the centre of the adult, and firmly attached to the thorax by a bony suture, covered by the end of the pectoral and abdominal plates. Tail short and thick.

Testudinidæ, *Gray, Ann. Phil.* x. 211 (1825); *Syn. Rept.* 8 (1831).
Testudinidæ, *Bell, Zool. Journ.* ii. 419, 513 (1828).
Swainson, Lard. Cyclop. 344 (1839).
Testudinina, *Bonap. Tav. Analit.* 5 (1836).
Testudinoides, *Fitzinger, Neue Class.* (1826).
Test. Tylopoda, *Wagler, Syst. Amph.* 138 (1830).
Fitz. Syst. Rept. 29 (1843).
Testudines, *Fitz. Syst. Rept.* 29 (1843).
Chersine, *Merrem, Tent.* 29.
Chersinæ, *Wiegm. & Ruthe, Handb. Zool.* 164.
Testudo (Tortues de terre), *Brongn. Cuv. R. A.* ii. 9; ed. 2. ii. 9.
Chersites ou Tortues terrestres, *Dum. & Bib. Erp. Gén.* ii. 1 (1835); *Cat. Mus. Par.* 3.
Testudines terrestres, *Plin.*
Testudinidæ Testudinina (part.), *Bonap. Saggio Anim. Vert.* 12.
Chersochelones (Dysmydæ), (part.), *Ritzen, Nov. Act. Nat. Cur.* xiv. 270 (1828).

SYNOPSIS OF THE GENERA.

1. Testudo. Thorax and sternum solid: sternal plates 12; inguinal plate moderate. Toes 5–4.
2. Homopus. Thorax and sternum solid: sternal plates 12; inguinal plates moderate. Toes 4–4.
3. Chersina. Thorax and sternum solid: sternal plates 11. Toes 5–4.
4. Kinixys. Thorax, hinder part mobile: sternal plates 12; inguinal plates very large. Toes 5–4.
5. Pyxis. Thorax solid. Sternum, front lobe moveable: sternal plates 12.

1. TESTUDO, *Linn.*

Thorax convex, subglobose, solid. Sternum solid, covered with twelve sternal shields, the gular pair separate; pectoral shields narrow; inguinal shields moderate. Head scaly, with two frontal shields above, and one vertical shield between the eyes. Claws 5–4, blunt.

Testudo (græca), *Gray, Ann. Phil.* x. 210 (1825); *Syn. Rept.* 8 (1831); *Cat. Rept. B. M.* 4.
Fleming, Phil. Zool. ii. 270 (1822).
Dum. & Bib. Erp. Gén. ii. 55 (1835); *Cat. Méth. Rept.* 3.
Chersini, *Merrem, Tent.*
Chelonoides (Boiei), *Fitz. Syst. Rept.* 29.
Geochelone (stellata), *Fitz. Syst. Rept.* 29.
Psammobates (geometrica), *Fitz. Syst. Rep.* 29.
T. (Testudo) græca, *Wagler, Syst.* 138 (1830).
Fitz. Syst. Rept. 29.
Megalochelys (gigantea), *Fitz. Syst. Rept.* 29.
Chersina (Cylindraspis) Vosmaeri, *Fitz. Syst. Rept.* 29.
Cherseus (marginatus), *Wagler, Syst.* 138 (1830).
Fitz. Syst. Rept. 29.
Testudo *a. Dum. & Bib. Erp. Gén.* ii. 57.
Testudo, sp., *Linn.*
Testudo, *Dum. & Bib. Erp. Gén.* ii. 30; *Cat. Méth. R.* 3.
Bell, Zool. Journ. ii. 514.
Wagler, Syst. 138 (1830).

They are slow in their motions, eating vegetables and

roots; living in woods or fields in warm and temperate parts of the world. In colder climates they burrow, and sleep during the winter.

In the genus *Testudo* the sternum is quite solid, but in some specimens of *T. mauritiana*, *T. marginata*, and *Homopus areolatus*, the hinder lobe has been observed to be moveable. On this account Dr. Wagler has separated the former into a genus, under the name of *Chersus*. But it may be only a peculiarity of the females when they are about to deposit their eggs, and will probably, when these animals have been more observed, be found common to the females of all the species.

A. *The last vertebral shield almost always as wide as the caudal and two hinder marginal plates.* American. Gophers.

Gophers, *Gray, Cat. Rept. B. M.* 4.

1. **Testudo Gopher.** The GOPHER or MONGOPA.

Shell oblong, depressed; shields pale brown, grooved; nuchal shield broad; sternum produced in front, deeply nicked behind; pectoral shields short; head and cheeks covered with scales; tail very short.

Gopher, *Bartram's Travels*, i. 55.
La Tortue gopher, *Bosc, N. Dict. H. N.* xi. 269.
? T. tessellata, *Merrem, Tent.* 31.
Testudo Gopher, *Gray, Cat. Rept. B. M.* 4.
T. Polyphemus, *Holbrook, Amer. Rept.* i. t. 1.
Say, Journ. A. N. S. Phil. iv. 204, 207.
Daud. Rept. i. 256.
Gray, Syn. 11.
Dum. & Bib. Erp. Gén. ii. 105; *Cat. Meth.* 5.
Schweigger, Arch. Koenigsb. i. 317.
Bonap. Testud. Europ. et Amer. 152.
T. depressa, *Lesueur, Cuv. R. A.* ii. 10.
Guérin, Icon. t. 1. f. 1.
T. Carolina, *Linn. Syst. Nat.*
Leconte, Ann. Lyc. N. H. iii. 97.
T. tabulata, *Schoepff.* 56. t. 13?
T. tabulata, var., *Schlegel, F. Japon.* 70.
? T. Schweiggeri, *Gray, Syn.* 10. var., in *Griffith, A. K.* iv. 7.
Dum. & Bib. Erp. Gén. ii. 108; *Cat. M. R.* 5.

Hab. North America; pine forests of Georgia and Florida.

Specimens in British Museum :—

a. Adult, brown; 8½ inches. N. America. Presented by Richard Harlan, M.D.

b. Adult, brown; 10½ inches. N. America. Presented by Edward Doubleday, Esq.

c. Adult, blackish. N. America; Mexico. Mr. Warwick's Collection.

d. Adult, blackish. North America. M. Parzudaki's Collection.

2. **Testudo tabulata.** The BRAZILIAN TORTOISE.

Shell subquadrate, oblong, depressed, sides contracted when adult; shields black, grooved, areola small, nuchal plate none; animal red or yellow, spotted.

Testudo tabulata, *Walb. Chelon.* 70. t. 22.
Daud. Rept. i. 242.
Gray, Syn. 10; *Cat. Rept. B. M.* 5.
Bell, Test. t. 1, 2.
Wagler, Syn. t. 5. f. 9; t. . f. 1–8. f. 45, 48; *Cat. Méth. R.* 5; *Neuw. Abbild.* t.
Dum. & Bib. Erp. Gén. ii. 89.
T. Hercules, *Spix, Braz.* t. 14.
Gray, Syn. 9.
T. Boici, *Wagler, Amphib.* t. 6. f. 7, 8; *Icones Amphib.* t. 13.
T. denticulata, *Schoepff.* t. 28. f. 1.
T. carbonaria, *Spix*, t. 16.
Bell, Test. t. 1, 2.
Duméril et Bibron, Erp. Gén. ii. 99; *Cat. Méth. R.* 5.
T. tessellata, *Schneider, Schoepff.* t. 12. f. 2, t. 13; *Neuw. Abbild.* t.
T. Cagado, *Spix, Braz.* t. 17.
T. sculpta, *Spix, Braz.* t. 18.
T. Graeca, *Herm. Obs. Zool.*
T. crosa, *Schweigger.*
T. gigantea, *Schweigger?*
T. foveolata, *Licht. Berl. Acad.* 251 (1820).
Sphargis mercurialis, *Schinz*, t. 8. f. 1! not *Merrem.*
The Brazilian Tortoise, *Gray, l. c.* 5.

Hab. America; Brazils; Cayenne; Guadaloupe; Chili.

a, b, c. Adult (stuffed). South America.

d. Adult (stuffed). South America. Presented by the Zoological Society.

e. Half-grown, with only eleven marginal scales (stuffed). West Indies. Presented by John Gould, Esq.

f, g. Half-grown and young. South America.

OSTEOLOGY. *Wiedemann, Arch. Zool.* ii. 181.

h, i, j, k, l, m, n, o. Shell only (adult and young). South America.

p, q, r. Skeletons (half-grown). South America.

This species differs in appearance according to the state of the surface of the shell. When perfect the surface is black, with small yellow impressed areolas to the plates surrounded with deep concentric grooves; but the surface is often more or less worn, when the concentric furrows are destroyed, the surface becomes smooth, and the small areolas are obliterated. In this state it has been considered a distinct species. The hinder vertebral plate is large, as broad as the caudal, the hinder marginal and the half of the second hinder marginal plate. In one specimen, which has only eleven marginal plates on each side (the two hinder being united?), the hinder vertebral is as wide as the caudal and half the large hinder marginal plates.

B. *The last vertebral generally only as wide as the caudal and half of each of the hinder marginal shields.* Confined to the Old World.

Testudo B, *Gray, Cat. Rept. B.M.* 6.

a. *Indian.*

3. **Testudo Indica.** The INDIAN TORTOISE.

Black; pectoral shields short; nuchal plates variable or wanting; animal black; last vertebral often as broad as the last three marginal.

Testudo Indica, *Gmelin, S. N.*
Gray, Syn. 9; *Cat. Rept. B.M.* 5; *Cat. Zool. Soc.* 40. fig. 9.
Chersina retusa, *Merrem, Tent.*
T. Elephantepus, *Harlan, J. Acad. Phil.* iii. 284. t. 9.
T. nigra, *Quoy, Voy. Uran.* t. 40.
Dum. & Bib. Erp. Gén. ii. 115; *Cat. Méth. R.* 5.
T. Californica, *Quoy, Bull. Sci.*
T. Dussumieri, *Schleyel, Mus. Leyd.* i.
Pet. Gaz. t. 76. f. 4.
T. giganten, *Schweig. Arch. Koenigsb.* i. 327.
Dum. & Bib. Erp. Gén. ii. 120; *Cat. Méth. R.* 5.
Schoepff. Hist. Testudinum, t. 22.
Shaw, Zool. t. 3.
Wiegmann, Bon. Trans. t. 13.
T. Vosmaeri, *Fitz. Cat.* 41.
Dum. & Bib. Erp. Gén. ii. 140; *Cat. Méth. R.* 6.
T. nigrita, *Dum. & Bib. Erp. Gén.* ii. 81.
T. Daudini, *Dum. & Bib. Erp. Gén.* ii. 125; *Cat. Méth. R.* 5.
T. Elephantina, *Dum. & Bib. Erp. Gén.* ii. 110; *Cat. Méth. R.* 5.
T. Perraultii, *Dum. & Bib. Erp. Gén.* ii. 126; *Cat. Méth. R.* 5.
La ronde, *Lacep. Quad. Ovip.* i. 126. t. 5.
T. orbicularis, *Bechst. in Lacep.* i. 154.
T. rotunda, *Latr. Rept.* i. 107.
T. Peltastes, *Dum. & Bib. Erp. Gén.* ii. 138; *Cat. Méth. R.* 5.
Chersina (Cylindrasyie) Vosmaeri, *Fitz. Syst. Rept.* 29 (1843).
Testudo (Megalochelys) gigantea, *Fitz. Syst. Rept.* 29.

Hab. Isle of France; Seychelles; Isle Angouan; India; California; Galapagos.

m. Adult (stuffed).

j. Adult animal and shell; 23 inches.

l. Half-grown (stuffed).

f. Young (stuffed); 7 inches. Nuchal plate none.

g. Young (stuffed); feet bad; 6 inches. Nuchal plate none.

i. Very young (stuffed); 4¼ inches. Whitish; nuchal plate none; nucleus of plates dark.

d. Very young (stuffed); 4 inches. Nuchal plate distinct. Last vertebral narrower than the last three marginal. Bengal. Presented by General J. Hardwicke.

OSTEOLOGY. *Cuvier, Oss. Foss.* v. 176. t. 11. f. 17, 20, skull.

A. Upper shell only, very large and broad. Presented by E. Cross, Esq.

a. Adult (shell only); 32 inches. Nuchal plate; not a good state.

c. Adult; 21 inches. Nuchal plate distinct.

e. Young (shell only); 14 inches. Nuchal plate distinct.

h. Young (shell only); 5¼ inches. Nuchal plate none; nucleus of marginal and gular plates pale.

b. Very young (only upper part of shell); 4 inches. No nuchal plate. Presented by J. E. Gray, Esq.

n. Skeleton; adult. India? Presented by Her Majesty.

o. Skeleton; half-grown. India. Mr. Bartlett's Collection.

p. Skeleton; half-grown.

q. Skull. India. Dr. Mantell's Collection.

r. Monstrosity. Dorsal shields and the bones beneath them very convex, concave within. India. Mus. Zoological Society.

Var. Elongate, compressed on the sides, and turned up at the edge.

Testudo Vosmaeri, *Fitz.*

s. Adult (stuffed). India? Presented by the Earl of Derby.

Testudo Indica.—The skull in the Museum Collection, and the one figured by Cuvier, t. 11. f. 17–20, have a very convex forehead.

4. **Testudo planiceps.** The FLAT-HEADED TORTOISE. TAB. XXXIV.

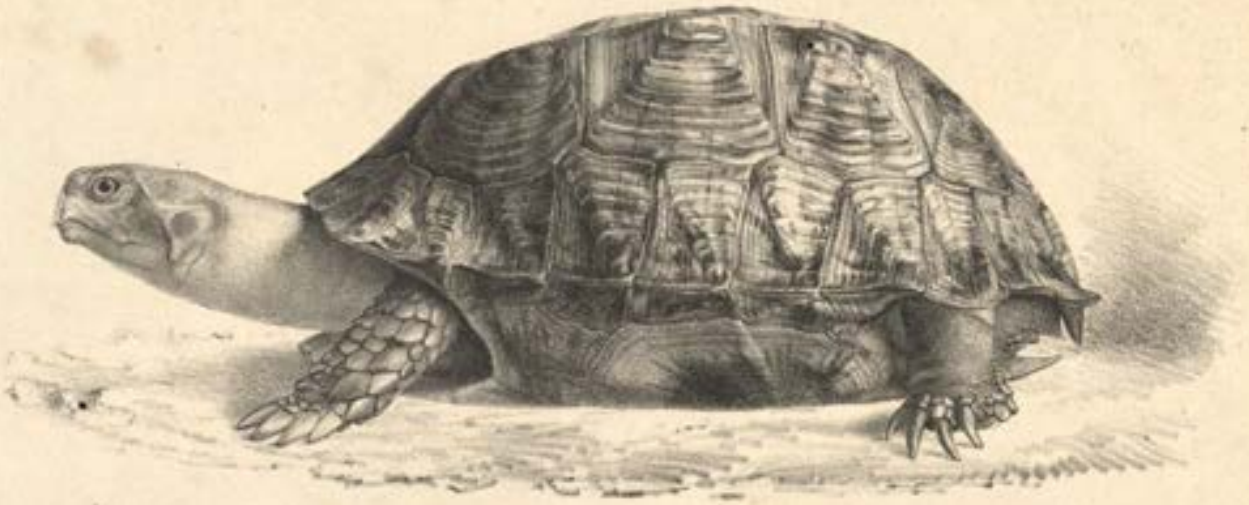
Skull much depressed, flat; forehead flat, rapidly shelving towards the nose-cavity.

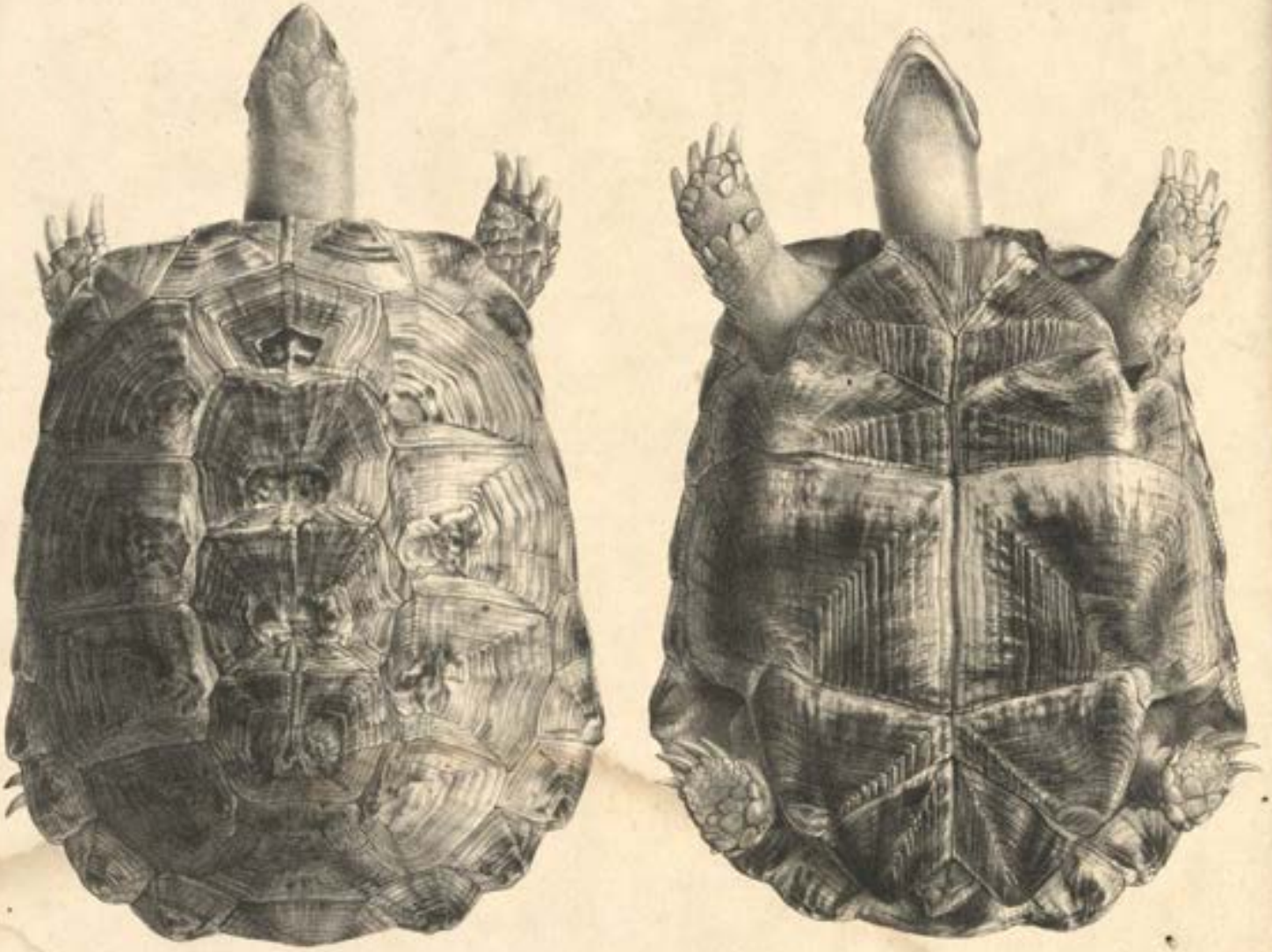
Testudo planiceps, *Gray, Proc. Zool. Soc.* 1853; *Ann. & Mag. N. H.* 1855, 153.

Hab. Galapagos?

This species is only known by the skull. The following are the descriptions and measurements of a skull of *T. Indica* and *T. planiceps* of nearly the same dimensions.

Testudo Indica.—Skull high, convex; forehead convex, rounded to the nose-cavity, broad between the eyes; temples flat behind; cheeks small, four-sided; edge of the jaw between the nose-cavity and the mouth narrow and rounded. Nose-cavity oblong, nearly twice as high as broad, contracted on each side above. Palate broad, oblong, very deeply concave, and with concave converging sides in front. Sphenoid bone deeply concave beneath under the condyle; lower jaws narrowed and rounded in front, not more than half as high as behind.





TESTUDO HORSFIELDII.

	T. planiceps.	T. Indica.
Length from condyle to front of lip	5½	5⅜
,, from occipital crest to nose-cavity ..	5⅜	5⅜
,, of palate concavity.....	2⅜	3⅜
,, of nasal opening.....	1 7/8	2
Width at condyles	4½	4
,, at end of temporal bones.....	3⅜	4½
,, of palate concavity in middle	1	1⅜
Height from back of upper lip to top of head	1⅜	2⅜
,, from front of lower jaw	1	0⅜

Testudo planiceps.—Skull much depressed, flat; forehead flat, with a rapid declivity towards the nose-cavity, narrow between the eyes; temples produced, bent in behind; cheeks large, subtrigonal; edge of the jaws between the nose-cavity and the mouth high and erect. Nose-cavity nearly square, scarcely higher than broad, and very little contracted above. Palate narrow, nearly lozenge-shaped, truncated behind, rather deeply concave, with straight converging sides in front. Sphenoid bone flat beneath under the condyle; lower jaw convex, erect in front and as high as behind.

After an examination of the specimens of the large Black Tortoise (*T. Indica*) in the various English and continental collections, including the specimens which had served Schweigger, Schlegel, Fitzinger, Duméril and Bibron, and others as the type of the species, in the Catalogue of the Tortoises, &c. in the Collection of the British Museum, I regarded them all as varieties of a single, very variable species, which had been scattered by man in different tropical parts of the globe. I see no cause to change this opinion with respect to the head above described and figured, even should it prove to be that of a black species, which is possible, as the black species is the only one known which has any affinity to it in point of size, and it is said to be from a shell of that colour. This skull was sent to Haslar Hospital, and was said to have been taken from a specimen brought from the Galapagos Islands.

The Black Tortoise of those Islands has been described by Dr. Harlan under the name of *Testudo Elephantopus*, but his figure and description so exactly agree with the adult *Testudo Indica*, and the specimen in the Gardens of the Zoological Society, brought from the Galapagos Islands, is so exactly similar to the specimens of *Testudo Indica* from the Mauritius, that I cannot think the usual black Galapagos Tortoise is different from that species, or like the skull here described under the name of *T. planiceps*.

5. Testudo Horsfieldii. HORSFIELD'S TORTOISE. TAB. I.

Shell oblong, rather depressed, pale, varied with blackish, especially upon the lower side; the areola of the costal plates near their upper edge; the gular plates elongate, triangular, longer than broad; the anal plates broader than long; the hinder notch broad, triangular, the hinder marginal plates broad, with the nucleus on the centre of their margin; the front edge of the fore arms with smaller scales than the hinder; the vent with two blunt spines on each side.

Testudo Horsfieldii (Dr. Horsfield's Tortoise), *Gray, Cat. Rept. B.M.* 7.

Hab. India; Affghanistan.

a. Young. India; Affghanistan. Presented by the Hon. East India Company.

This species is very like *Testudo sulcata*, but the shell is more depressed, the margin rather more produced and toothed, and the scales of the fore feet are small and unequal, and those on the side of the vent are shorter and broader than in that species. The nuclei of the hinder marginal shields are central, while in *T. sulcata* they are on the hinder edge of the scales.

It resembles *T. græca*, but the three pairs of sternal plates are longer in comparison to their width than any specimens we have, and the nuclei of all the hinder marginal plates are on the hinder edge, and not in the centre.

6. Testudo stellata. The STARRED TORTOISE.

Shell ovate, convex; shields convex, grooved, black, yellow-rayed; areola large, placed near the hinder edge; nuchal shield none; head and feet black, yellow-spotted; tail short.

Testudo stellata, *Schweigger, Prod.* i. 325.
Gray, Syn. 12. t. 313; *Cat. Rept. B. M.* 7.
Seba, Thes. t. 79. f. 3, t. 80. f. 3.
T. actinoides, *Bell, Zool. Journ.* iii. 419. t. 14; *Test.* t. 1, 2.
Dum. & Bib. Erp. Gén. ii. 66; *Cat. Méth. R.* 5.
T. elegans, *Schoepff.* t. 25. f. 1.
T. geometrica, *Shaw, Zool.* v. t. 2. f. 1; *Indian Rev.* 1838, t.
Le Géométrique, *Lacep. Q. O.* 155. t. 9.

Young. Yellow; black-rayed.

Testudo stellata, *Schweigger, Prod.*
T. elegans, *Schoepff. Test.* t. 26.
Daud. Rept. t. 25. f. 1.
Gray, Syn. t. 3. f. 1, 2.
Geochelone stellata, *Fitz. Syst. Schildk.* 122; *Syst. Rept.* 29.

Very young. Shell yellow; commissures of the shields black, forming together a lanceolate spot.

Testudo elegans, *Schoepff. Test.* t. 26, copied *Shaw, Zool.* ii. t. 6.

Hab. India; Ceylon.

a. Adult (stuffed); 6 inches. Shields few-rayed. Ceylon. Presented by J. E. Gray, Esq.

f, g, h, i. Adult (stuffed). Dorsal shields many-rayed. India. Capt. Boys' Collection.

j, k. Animal (unstuffed). India.

l. Animal and shell (stuffed); shield of the back conical, convex, truncated, many-rayed. India. From the Zoological Society.

Osteology:—

c. Adult (shell only); 10 inches. Shields very high, truncated. Philippines.

m. Adult (shell only); 10 inches. Shields flattish. India; Madras. Presented by T. C. Jerdon, Esq.

b. Half-grown (shell only). Shields flattish, black, with few yellow rays.

n. Half-grown (shell only), like *b*.

c. Young (upper shell only). Depressed, broad, pale; nucleus very large, pale margin of shields blackish marked.

d & *o.* Young. Nucleus moderate; nucleus and margin brown-edged, with four broad yellow rays.

The specimens *c* and *d* show the very different size of the young of this species when they are first hatched, the shell *c* being nearly twice as long and wide as *d*, and yet the shields have only one or two rings round the nucleus, while in *d* they have several.

b. *African.*

7. Testudo geometrica. The Geometric Tortoise.

Shell oblong, convex; shields yellow, grooved, black-rayed; areola yellow, truncated; nuchal shield long.

Testudo geometrica, *Linn. Syst. Nat.* i. 353.
Gray, *Syn.* 12; *Cat. Rept. B. M.* 8.
Dum. & Bib. Erp. Gén. ii. 57; *Cat. Méth. R.* 3.
Seba, Thes. t. 80. f. 8.
Lacep. Q. O. t. 3. f. 2.
Shaw, Zool. ii. t. 2.
Schoepff. Test. t. 10.
Daud. Rept. t. 25. f. 1.
Psammobates geometricus, *Fitz. Syst. Rept.* 29 (1843).
Testudo (Psammobates) geometrica, *Fitz. Syst. Schildk.* 122.
Chersine geometrica, *Merrem.*
T. luteola, *Daud. Rept.* ii. 277. t. 25. f. 3.
T. tentoria, *Bell, Zool. Journ.* iii. 420. t. 24; *Test.* t. 1.

Hab. Africa; Cape of Good Hope; Madagascar.

Var. 1. Shell oblong, elongate, narrow, discal plate flat or concave; sternum flat or concave, brown, rare; nuchal plate elongate, narrow; caudal shield much incurved (*T. geometrica*).

l. Animal and shell (young); 2¼ inches. Plates rather convex. Cape of Good Hope.

Osteology:—

b, c, d. Shells only, various sizes, all wanting the front lobe of sternum. South Africa.

e. Wanting front lobe of sternum; discal shields rather convex. South Africa. Dr. Mantell's Collection.

k. Shell (young); 2¼ inches. Plates flattish. Cape of Good Hope.

Var. 2. *tentoria.* Shell oblong, ventricose; sternum convex, black-rayed; nuchal plates elongate, narrow; shields convex, truncated; caudal shield incurved, convex (*T. tentoria*, Bell).

Osteology:—

a. Shell wanting the first lobe of sternum; 4¼ inches. South Africa. Mus. Sloane.

f. Shell. Cape of Good Hope. Presented by Gen. Th. Hardwicke.

g. Shell only, wanting a few plates; 5 inches. Vertebral shield very high. Cape of Good Hope.

Var. 3. *nigriventris.* Shell oblong, ventricose; sternum convex, dark in the middle, white on the sides; nuchal plates short, truncated; shields convex, often high, truncated.

m. Animal and shell (wanting discal plates). South Africa.

h. Shell (adult); 5½ inches. Dorsal shields high, conical; caudal plate produced. Cape of Good Hope. Presented by Robert Brown, Esq.

i & *j.* Shell (young). Dorsal shield rather convex; caudal plate inflexed. Cape of Good Hope. Presented by Robert Brown, Esq.

n. Shell (half-grown). South Africa.

o. Animal and shell (very young). Mauritius. Presented by Lady Frances Cole.

The specimen of *Testudo luteola* (*Daud. Rept.* t. 25) in the Paris Museum is evidently a young shell of this species, without any shields.

There is no difference in the colour or in the size of the areolæ of the three varieties; the nuchal shield of the variety *tentoria* is sometimes reduced to a linear transverse band, and is very rarely quite deficient.

Schlegel refers *Testudo tentoria* and *Pyxis arachnoides* of Bell to this species (*Fauna Japonica*).

8. Testudo Verroxii. Verreaux's Tortoise.

Shell rather depressed, broad, brown, varied with broad black and narrow, pale yellow rays and spots; beneath yellow, brown varied with a few black rays; marginal shields placed at an angle with respect to the costal shield; nuchal plate triangular; discal plates simple, convex; areola black, with four yellow rays. Head above yellow; feet with large imbricate scales in front.

Testudo Verroxii, *A. Smith, Illustr. Zool. S. Africa*, t. 8 *f.* worn.
Gray, Cat. Rept. B. M. 9.

Hab. South Africa.

a. Animal and shell. South Africa. From Mr. Warwick's Collection.

This species chiefly differs from *T. geometrica* in being more depressed, brown, with black and narrow yellow rays.

9. Testudo semiserrata. The Toothed Cape Tortoise.

Brown, yellow-rayed; below yellow, black-rayed; nuchal shield elongate, triangular; anterior and posterior margin strongly serrated, the hinder margin recurved; discal shield with six or eight, marginal shield with one or two, broad black rays; the fore feet with large tubercular scales above the claws.

Testudo semiserrata, *A. Smith, Illust. S. Afric. Zool.* t. 4. *Gray, Cat. Rept. B.M.* 8. *Dum. Cat. Méth. R.* 3.

Hab. South Africa.

a. Adult. Shields rather convex. South Africa. From the South African Museum.

b & *c.* Shields scarcely raised. South Africa. From the South African Museum.

Osteology:—

d. Young (shell only). Thorax orbicular; margin more acutely serrated. South Africa. From the South African Museum.

10. Testudo radiata. The Coui.

Shell hemispherical; shields flat, grooved, black, yellow-rayed, areola small, rufous; nuchal shield triangular; sternum produced in front, truncated behind.

Testudo radiata, *Shaw, Zool.* iii. t. 2. *Grew, Mus.* t. 3. f. 2. *Bell, Test.* t. 1, 2. *Gray, Syn.* 11; *Griffith's A. K.* ix.; *Cat. Rept. B.M.* 5. *Dum. & Bib. Erp. Gén.* ii. 83; *Cat. Méth. R.* 5. *Wagler, Syst. Amphib.* t. 6. f. 1, 2, skel.
T. Coui, *Daud. R.* ii. 271. t. 26. f. 2.
T. Madagascariensis, *Comm. Mus. Par.*
T. calcarata (part.), *Merrem, Tent.* t. 11.

Hab. Madagascar.

k. Adult (shell and animal). Margin and shields much worn. Gular plate produced, rounded, not nicked; anal plate very short, very convex. Madagascar.

d. Shell and animal; 6½ inches. Gular plate nicked. Madagascar.

l. Like *k*, but gular plate nicked.

m & *n.* Very young (animal and shell). Madagascar.

Osteology. *Wagler, Syst. Amphib.* t. 6. f. 1, 2, skeleton; *Cuvier, Oss. Foss.* v. 193. t. 12. f. 1, 6, 12, t. 13. f. 16, 17, 27, 28, 35.

a. Upper shell only; 9 inches. Madagascar. From the Museum of the Royal Society.

b & *c.* Shell only. Madagascar. Presented by Gen. Th. Hardwicke.

e. Shell only, wanting some plates; 5½ inches. Madagascar.

f. Young (shell only); 4 inches. Gular plate short, truncated. Madagascar.

g & *o.* Young (shell only).

h. Very young (shell only).

i. Half-grown (shell only).

p. Skeleton and shell. Madagascar. From the Zoological Society.

q. Shell only. Shield black, with very broad yellow rays. Madagascar.

11. Testudo Pardalis. The Leopard Tortoise.

Shell nearly hemispherical, blackish or yellow, black-spotted; shields grooved; areola of the costal shields near the upper edge; nuchal shields none.

Testudo Pardalis, *Bell, Zool. Journ.* ii. 420. t. 25; *Test.* t. 1, 2. *Gray, Syn.* 12. t. 1. f. 2, 3; *Cat. Rept. B.M.* 7. *Dum. & Bib. Erp. Gén.* ii. 71; *Cat. Méth. R.* 4.
T. armata, *Boie, Erp. Jav. MS.*
T. bipunctata, *Cuv. R. A.* ii. 10. *Gray, Syn.* t. 3. f. 2, 3. *Gottw. Schildk.* t. k. f. 15.
Testudo Boiei, *Wagler, Icon. Amphib.* t. 13; *Syst. Amphib.* 138. t. 6. f. 7, 8.
Chelonoides Boiei, *Fitz. Syst. Rept.* 29 (1843).
Geochelone chelonoides Boiei, *Fitz. Syst. Schildk.* 122.
"T. biguttata, *Cuv.*," *Fitz.*
"Testudo signata, *Walbaum*, t. 11," *Schlegel.*
Geochelone pardalis, *Fitz. Syst. Schildk.* 122.

Hab. Africa; Cape of Good Hope; Port Natal.

d. Adult (animal and shell); 12½ inches. South Africa. From the South African Museum.

e. Animal and shell (half-grown). South Africa. Presented by the Zoological Society.

Osteology:—

f. Adult (stuffed); discal shield convex; caudal shield produced, elongate. South Africa. From the Zoological Society.

g. Young (shell only, without front lobe of sternum); yellow, shields black-edged, areola spotted; shields grooved.

h. Sternum only; 13 inches. South Africa.

12. Testudo sulcata. The Grooved Tortoise.

Shell oblong, depressed, dirty-yellow, dorsal line flattened, with a deep triangular notch in front; front and hinder margin strongly reflexed and deeply toothed; lateral edge slightly keeled; caudal plate very broad, inflexed; shields deeply grooved, areola small, of costal and marginal plates marginal. Animal blackish-brown; scales over the eyebrows small; sternum produced and bifid in front. Animal pale yellow; feet with very large scales in front; thighs with two large spines.

Testudo sulcata, *Miller, Cim. Phys.* t. 26.

Testudo sulcata, *Gray, Syn.* 68 ; *Cat. Rept. B.M.* 7. *Dum. & Bib. Erp. Gén.* ii. 74. t. 13. f. 1 ; *Cat. Méth. R.* 5.
T. calcarata, *Schn. Syn.* t. 12. *Beckst. in Lacep.* i. 346. t.
T. radiata Senegalensis, *Gray, Syn.* 11. *Schlegel, F. Japon.* 74.
T. Schoepfii, *Rüppell.*
Geochelone sulcata, *Fitz. Syst. Schildk.* 122.

Hab. Africa ; Abyssinia ; Cape ; Senegal ; "Buenos Ayres."

a. Young (stuffed) ; 8 inches. Abyssinia. From the Frankfort Museum.

Osteology :—

b. Adult (upper shell only) ; 19 inches. South Africa.

c. *European.* Cherseus.

13. Testudo græca. The Tartaruga.

Shell oblong, subglobose ; shields rather convex, black and yellow-varied ; nuchal shield distinct.

Testudo Græca, *Linn. Syst. Nat.* ii. 552. *Gray, Syn.* 13 ; *Cat. Tort. B. M.* 9. *Valenc. Expéd. Morea*, t. 7. f. 1, t. 9. f. 4. *Shaw, Zool.* ii. t. 1. *Schoepff. Test.* t. 8, 9. *Dum. & Bib. Erp. Gén.* ii. 49 ; *Cat. Méth. R.* 5 ; not *Pallas.*
T. Carolina, *Herm.*
T. geometrica, *Brünnich, Adriat.* 92.
T. Hermanni, *Schneid.* 348. *Gmelin, Syst. Nat.* 1041. *Seba*, t. 80. f. 1. *Knorr, Del. Nat.* ii. t. 52. f. 1.
T. pusilla, *Shaw, Zool.* iii. 53.
T. Ibera, *Pallas? Zool. Ross.* ii. *Eichw. Zool. Spec.* ii. 196 ; *Fauna Casp. Cauc.* 43. t. 5?
T. Mauritanica, *Dum. & Bib. E. Gén.* ii. 44 ; *Cat. Méth. R.* 3. *Bonap. Test. Eur. et Amer.* 251.
African Laud Tortoise, *Edw. Birds*, t. 204.
T. Zohaffa, *Forskael, F. Arab.* 12.
Chersine græca, *Merrem, Tent.* 31.
Testudo terrestris, *Gesner, Quad. O.* 107, fig. *Raii Quad.* 243.
La Tortue grecque, *Cuv. R. A.* ii. 9.
Testudo (testudo) græca, *Fitz. Syst. Rept.* 29.

Hab. Europe ; North Africa ; Greece.

Var. Shell very convex, black, yellow spotted ; edge of shell very blunt ; dorsal shields angular, deeply grooved ; tail very short, conical, blunt. Body 1 foot ; tail 1 inch.

Cherseus Iberus, *Ch. Bonap. Amph. Eur.* 271.

Hab. Iberia, near Tiflis.—*Eichw.*

Males? Caudal plate broad, strongly inflexed, sometimes grooved.

a. Adult (stuffed). Sternum flat, black ; caudal with a groove ; 5 inches. South Europe. Presented by J. E. Gray, Esq.

d & e. Stuffed. Sternum black varied ; caudal plate entire, 5¼ inches. South Europe.

m. Stuffed. South Europe. Presented by J. E. Gray, Esq.

Osteology :—

b. Shell only. Sternum rather concave, black. 1¼ inches. South Europe. Presented by Gen. Th. Hardwicke.

o. Shell only. Caudal plate entire ; hinder lateral margin rather expanded. South Europe.

Females? and young. Caudal plate rather narrow, flat, sometimes divided.

T. Mauritanica, *Dum. & Bib. Erp. Gén.* ii. 11.

c. Stuffed. Vertebral shields convex ; caudal plates with a groove ; sternum black ; 5 inches. South Europe. Presented by Gen. Th. Hardwicke.

f. Stuffed. Sternum black varied ; 7 inches. Some of the marginal plates wanting. South Europe.

j. Stuffed (young) ; 2½ inches. South Europe. Presented by Gen. Th. Hardwicke.

k, l. In spirits (young). South Europe. Presented by J. E. Gray, Esq.

p. Adult (stuffed). Hinder marginal plates rather produced. South Europe. Presented by J. E. Gray, Esq.

Osteology :

g. Shell only ; 5¼ inches. South Europe.

h. Shell only ; 5 inches. South Europe. Presented by J. E. Gray, Esq.

Testudo Mauritanica, *Dum. & Bib. Erp. Gén.* ii. 41.

i. Shell only ; 7¼ inches. South Europe. Presented by Gen. Th. Hardwicke.

n. Shell only (half-grown).

p, q, r. Shell only (young).

s & t. Skeleton and shell (adult and young).

These shells vary considerably in external appearance. In some the caudal plate is broader and strongly bent in at the tip ; in others it is narrower and flat, or even sometimes slightly bent out at the tip. All the female and young specimens I have examined have this form ; I therefore consider it as a sexual character only. The caudal plate in both of these variations is often divided by a more or less distinct central longitudinal groove, which has been considered as a specific character, but it varies greatly in distinctness in different specimens ; in some the margins over the hind limbs are more produced and reflexed than

in others; these appear to pass almost into *T. marginata*. This variety is figured by *Schoepff*. t. 9.

The hinder lobe of the sternum of the female is sometimes moveable.

Called *Tartaruga* at Rome, where they are sold in the market and eaten on fast days.

In the College of Surgeons there is a very narrow and high variety, with the caudal plate spread out, and the margin dilated and reflexed.

Schlegel refers *T. marginata* and *T. Zolhafæ* as varieties of *T. græca*.

14. Testudo marginata. The MARGINED TORTOISE.

Shell oblong, ventricose, hinder edge horizontally expanded; shields black, yellow-varied, grooved, areola small, yellow; nuchal plate slender, long; animal blackish; limbs largely scaled.

Testudo marginata, *Schoepff*. t. 11, 12. f. 1.
Gray, Syn. 11; *Cat. Tort. B.M.* 9.
Valenc. Eepéd. Morea, t. 7. f. 2.
Dum. & Bib. Erp. Gén. ii. 37; *Cat. Méth. R.* 3.
Wagler, Amphib. t. 25.
T. Graii, *Herm. Obs. Zool.* 219.
T. Græca, *Lacep. Q. O.* t. 5. f. 2.
T. græca, var., *Schlegel, F. Japon.* 7.
T. campanulata, *Walb. Chel.* 124.
T. lutraria, *Gmel.*
T. rotunda, *Lacep., Schneid. Phys. Sacra*, ii. 261.

Hab. North Africa; Barbary; Algeria; Greece; Egypt.

a. Animal and shell (young); 3½ inches. Caudal plate produced, flat. South Europe. Presented by J. E. Gray, Esq.

Geochelone rotundata, *Fitz. Syst. Schildk.* 122.
Testudo Cherseus marginatus, *Fitz. Syst. Schildk.* 122.
Cherseus marginatus, *Wagler, Syst.* 138; *Icon. Amphib.* t. 25.
Fitz. Syst. Rept. 29.

OSTEOLOGY:—

Caret, *Spix, Cephal.* t. 4. f. 12, 15, skull.

a. Shell only (adult). The hinder margin very much produced. Greece. Mr. Parry's Collection.

It is doubtful if this is more than an accidental variety of *T. græca*, for the hinder lateral margin of the shell of that species is often more or less produced.

What is *Testudo Forstenii*, from Gilolo,—*Schlegel, Verhand.*?

Schlegel, on the cover of *Fauna Japonica*, gives the name of *Testudo margaritifera* to the figure of a Tortoise with hair from the base of a very high hump on its back.

2. HOMOPUS.

Shell depressed, solid. Sternum solid; hinder lobe sometimes mobile; sternal shields 12, gular plates separate, pectoral plates narrowed on the inner edge. Claws 4 · 4, elongate, acute. Fore-legs covered with uniform large elongated scales. Sternum convex; gular plates short, separate. Africa.

Homopus, *Dum. & Bib. Erp. Gén.* ii. 145 (1835); *Cat. M. R.* 6.
Gray, Cat. Tort. B.M. 10 (1844).
Testudo Homopus, *Fitz. Syst. Rept.* 29 (1843).
Testudo, sp. *Gray, Syn.* 13.
Testudo § Chersobius, *Fitz. Syst. Schildk.* 122 (1836).

1. Homopus signatus. The SPECKLED TORTOISE.

Shell oblong, uniformly inclined on the sides; shield flattish, yellow, black-lined or dotted, areola blackish, sunk.

Homopus signatus, *Dum. & Bib. Erp. Gén.* ii. 182; *Cat. Méth. R.* 6.
Gray, Cat. Tort. B. M. 10.
Testudo signata, *Walb. Chel.* 71. 120.
Schoepff. 120. t. 28. f. 2.
Gray, Syn. 13.
Bell, Test. t.
T. denticulata, var., *Gmel. Syst. Nat.* i. 1045.
T. cafra, *Daud. Rept.* ii. 291.
T. pardalis, jun., *Schlegel, F. Japon.* 73.
Chersine signata, *Merrem, Tent.* 43.
Testudo Chersobius cafra, *Fitz. Syst. Schildk.* 122.
Testudo Chersobius signata, *Fitz. Syst. Schildk.* 122.

Hab. South Africa; Cape of Good Hope.

a. In spirits (young). South Africa.

b. Dry, from spirits (very young). Isle of France?

2. Homopus areolatus. The AREOLATED TORTOISE.

Shell oblong, depressed, bent up on the sides; shields convex, grooved, yellow; sutures deep, areola sunk, fulvous; nuchal shield slender; animal pale brown; legs largely scaly.

Homopus areolatus, *Dum. & Bib. Erp. Gén.* ii. 146. t. 15. f. 2, 3; *Cat. Méth. R.* 6.
Gray, Cat. Tort. B. M. 10.
Testudo areolata, *Thunb. N. A. Sued.* viii. 180.
Gray, Syn. 13.
Bell, Test. t. 1, 2.
Seba, Thes. i. t. 80. f. 61.
Schoepff. t. 23.
Chersina tetradactyla, *Lesson, Bell. Sci.* xxv. 119.
Merrem, Tent. 43.
T. fasciata, *Daud. R.* ii. 294.
T. pusilla, *Daud. R.* ii. 299.
T. Juvencella, *Daud. R.* ii. 299.
Le Vernillion, *Lacep. Q. O.* 166.
Testudo Chersobius fasciata, *Fitz. Syst. Schildk.* 122.
Chersina fasciata, *Merrem.*

Hab. South Africa; Cape of Good Hope.

d. Animal and shell (dry), Cape of Good Hope. Mr. Parzudaki's Collection.

e. Animal and shell (stuffed); discal shield very convex, truncated. South Africa. From the Zoological Society.

Osteology:—

b. Shell only; 3½ inches. South Africa. Presented by J. E. Gray, Esq.

f. Shell only. Mauritius.

a. Animal and shell (dry); not good state; 3 inches. Cape of Good Hope. Presented by R. Brown, Esq.

c. Animal and shell (stuffed); 3½ inches. From the South African Museum.

Var. *pallida*. Shell hemispherical; shields pale grooved, areola blackish; caudal shield broad, incurved.

Homopus areolatus, var. pallida, *Gray, Testudinata*, 5, ined.

Hab. Africa.

a. South Africa. Presented by Robert Brown, Esq.

Apt to vary in the number and form of the vertebral, costal and marginal shields; the nuchal shield is sometimes wanting, or reduced to a small triangular scale behind the angles of the marginal plates.

Animal pale brown-black, strongly toothed; head with small scales and a large six-sided occipital plate; fore-leg with lanceolate tubercular scales; tail short, conical; cheeks covered with small scales.

Testudo cafra and *Testudo Juvencella*, Daudin, of which only two very imperfect specimens exist in the Paris Museum, are probably varieties of one of these species. The first has fifteen discal and the latter very convex dorsal plates.

3. CHERSINA, *Gray*.

Thorax convex, very solid. Sternum solid; sternal shields 11; the gular pair united into a single produced one; inguinal plates moderate. Claws 5·4.

Palate of skull flat.

Chersina, *Gray, Syn. Rept.* 14. 69 (1831); *Griff. A. K.* ix.; *Cat. Tort. B.M.* 11 (1844).
Testudo et Chersina, *Fitz.-Syst. Schildk.* 122 (1836).
Chersina (Chersina), *Fitz. Syst. Rept.* 29 (1843).
Testudo (§ iii. part.), *Dum. & Bib. Erp. Gén.* ii. 151; *Cat. Méth. R.* 5.

Duméril and Bibron and Fitzinger have confounded this genus with the varieties of *Testudo Indica*, which have the gular plates united or apparently so.

Palate of skull flat, very unlike that of true *Testudines*, where the palate is very deep, concave.

1. Chersina angulata. The Angulated Tortoise.

Shell oblong, ventricose; shields black-grooved, yellow-varied; areola yellow, sunk.

Chersina angulata, *Gray, Syn.* 15. 69. t. 1, 2; *Cat. Tort. B.M.* 11.
Fitz. Syst. Rept. 29.
Testudo angulata, *Dum. MSS. in Mus. Paris.*
Schweigg. Arch. Kœnigsb. i. 321.
Bell, Test. t. 1.
Dum. & Bib. Erp. Gén ii. 330; *Cat. Méth. R.* 5.
T. Bellii, *Gray, Spic. Zool.* t. 3. f. 1.
Knorr, Del. Nat. ii. t. 52. f. 2.
T. flavo-fusca, *Mus. Berl.*
T. pusilla, *Linn. Syst. Nat.* ii. 353.
T. Grœii, *Dum. & Bib. Erp. Gén.* ii. 135; *Cat. Meth. R.* 5.
T. tabulata, var. Africana, *Schweigg. Arch. Kœnigsb.* i. 322.
? T. sculpta, *Brandt*, not *Spix*.

Hab. South Africa; Cape of Good Hope; Madagascar.

a. Adult (animal and shell; stuffed); worn. Pale horn-colour, with a brown spot in each areola; 7¼ inches. South Africa. Presented by J. E. Gray, Esq.

b. Animal (half-grown), not good state; 5¼ inches. Cape of Good Hope. Presented by Robert Brown, Esq.

e. Animal and shell (half-grown), in spirits. Cape of Good Hope. Mr. Brandt's Collection.

Testudo sculpta, *Brandt, MSS.*, not *Spix*.

f & *g*. Animal and shell (stuffed). South Africa

Osteology:—

c. Shell only (half-grown); 5¼ inches. Cape of Good Hope. Presented by R. Brown, Esq.

d. Shell only (young), solid; 4 inches. Cape of Good Hope. Presented by J. E. Gray, Esq.

i & *j*. Shell only. Cape of Good Hope.

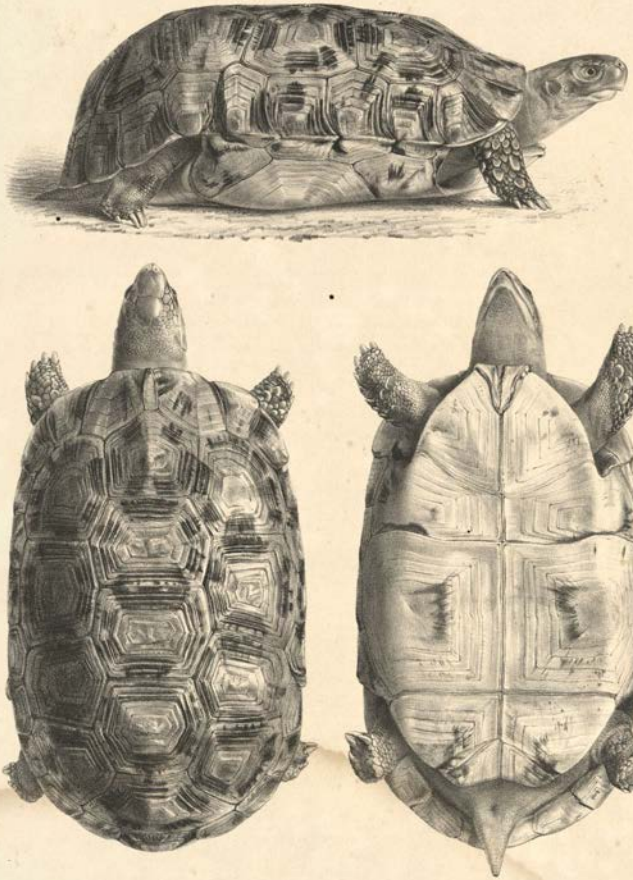
Schlegel considers *Kinixys castanea* and *K. Homeana* as varieties of the species.

4. KINIXYS.

Thorax convex, hinder lobe becoming mobile, with a curious suture over the inguinal plate. Sternum solid; sternal plates 12; gular pair separate; inguinal plates very large. Claws 5·4 or 4·4, cylindrical, blunt; outer front one small.

Kinixys, *Bell, Linn. Trans.* xv.; *Zool. Journ.* ii. 514 (1828).
Gray, Syn. 15 (1831); *Cat. Tort. B.M.* 11.
Cinixys, *Wagler, Syst.* 138 (1830).
Fitz. Syst. Rept. 29 (1843); *Syst. Schildk.* 121 (1836).
Cinothorax (Bellianus), *Fitz. Syst. Rept.* 29 (1843).

In the young the dorsal suture is scarcely observable, but then the genus can be distinguished by the large size of the inguinal plates; the suture becomes more observable



KINYXIS BELLIANA

as the animal increases in age, unlike the Box Tortoises, where the moveable lobes of the sternum often become anchylosed in the older specimens. Cuvier, having seen only one specimen (*Règ. Anim.* ii. 10), considered this structure as an accidental deformity, and Wagler by mistake says it is the front part that is moveable.

In a very perfect young specimen in the Museum, the third costal shield is divided obliquely across by a regular linear suture into two distinct plates, from the hinder part of the upper to the front part of the lower or outer edge.

The number of the claws is liable to vary in the same specimen.

* *Sternum truncated before and behind; fifth vertebral plate evenly convex; claws 4·4 or 5·4.* Cinothorax.

1. Kinixys Belliana. BELL'S KINIXYS. TAB. II.

Shell oblong, subquadrate, yellow, brown-rayed, rather depressed in front, margin nearly entire; fourth and fifth vertebral shields equally convex; nuchal shield elongated.

Kinixys Belliana, *Gray, Syn.* 69; *Cat. Tort. B.M.* 12. *Griffith. A. K.* t.
Cinixys Belliana, *Dum. & Bib. Erp. Gén.* ii. 168; *Cat. Méth. R.* 6.
Kinixys Shoensis, *Rüppell, Mus. Senck.* t.
Cinothorax Bellianus, *Fitz. Syst. Rept.* 29 (1843).
Cinixys (Cinothorax) belliana, *Fitz. Syst. Schildk.* 121 (1836).

Hab. North and West Africa; (naturalized in Guadaloupe? and Mexico?).

a. Animal and shell. Claws 5·4. Yellow, much rubbed. Africa? Presented by Dr. John Edward Gray.

b. Animal and shell (adult). Claws 4·4. Yellow, brown-rayed. Gambia. Presented by J. Whitfield, Esq.

c. Animal and shell (stuffed). Claws 4·4. Discal shields concentrically grooved, pale yellow, black-rayed; areola brown varied; sternum yellow, flat. "Mexico." Mr. Warwick's Collection.

d. Very young (in spirits). The nuchal shield short, small, distinct, the third costal plate on each side divided regularly and obliquely across; the fore-leg with a row of triangular spines on the inner side, and two or three scattered irregular spines on its front part. Africa. Mr. Bartlett's Collection.

** *Sternum deeply notched in front; claws 5·4; fifth vertebral plate regularly rounded.* Cinixys.

2. Kinixys erosa. ERODED KINIXYS.

Shell oblong, brown (yellow-rayed?), hinder edge reflexed, toothed; the fifth vertebral shield equally rounded; nuchal shield none.

Kinixys erosa, *Gray, Syn.* 16; *Cat. Tort. B.M.* 12.
Cinixys erosa, *Dum. & Bib. Erp. Gén.* ii. 165; *Cat. Méth. R.* 6.
Testudo angulata (adult), *Schlegel, F. Japon.* 72.
Kinixys castanea, *Bell, Linn. Trans.* xv. t. 18.
Testudo erosa, *Schn. Arch. Kenigsb.* i. 321 (jun.).
T. denticulata, *Shaw, Zool.* ii. t. 13 (jun.), not *Linn.*
Cinixys castanea, *Fitz. Syst. Rept.* 29; *Syst. Schildk.* 121.
Testudo Schöpfii, *Fitz.*

Young. Back equally rounded; five vertebral shields scarcely raised.

Kinixys castanea, *Bell, Linn. Trans.* xviii. t. 18.

Very young. Shell depressed, entire; edge toothed.

Testudo denticulata, *Shaw, Zool. ii, t. 13,* in *Mus. Coll. Surg.*
T. erosa, *Schweigger.*

Hab. West Africa; Gambia.

a. Adult shell (with fore feet only); 9½ inches. Fore feet covered with three rows of large, long, triangular scales. West Africa; Gambia.

OSTEOLOGY:—

b. Half-grown (shell only); 6 inches. West Africa. Presented by Thomas Bell, Esq.
Kinixys castanea, *Bell, Linn. Trans.* xv. t. 18.

c. Half-grown (shell only); 5 inches. West Africa?

*** *Sternum slightly notched in front; claws 5·4; fifth vertebral plate produced.*

3. Kinixys Homeana. HOME'S KINIXYS.

Shell oblong, subquadrate, brown, hinder edge reflexed; upper edge of the fifth vertebral shield compressed, produced; nuchal shield generally distinct.

Kinixys Homeana, *Bell, Linn. Trans.* xv. 400. t. 17 (1828). *Gray, Syn.* 15; *Cat. Tort. B.M.* 11.
Cinixys Homeana, *Dum. & Bib. Erp. Gén.* ii. 161. t. 14. f. 2; *Cat. Méth. R.* 6.
Berthold, Act. Nat. Cur. xxii. t. 12 (1845).
Fitz. Syst. Schildk. 121.
Testudo Homeana, *Gray, Zool. Misc.* 1825.
T. angulata (adult), *Schlegel, F. Japon.* 72.

Hab. West Africa; (naturalized in Demerara? and Guadaloupe?).

OSTEOLOGY:—

a. Shell only; 7 inches. Demerara. Presented by Sir Everard Home, Bart.

b. Shell only. Cape Coast, West Africa. Presented by Lieut. Matthew C. Friend, R.N.

M. Schlegel (*Faun. Japon. Chelon.* 72) regards both

K. castanea and *K. Homeana* as the adult state of *Chersina angulata*!

5. PYXIS.

Shell subglobose, solid. Sternum with the front lobe mobile, the suture below the humeral and pectoral shields. Animal ——?

Pyxis, *Bell, Linn. Trans.* xv. i. 16; *Zool. Journ.* ii. 514.
Gray, Syn. Test. 16; *Cat. Tort. B.M.* 12 (1844).
Duméril & Bibron, Erp. Gén. i. 155; *Cat. Méth. R.* 6.
Wagler, Syst. 138.
Testudo § 6 (Pyxis), *Fitz. Syst. Schildk.* 122; *Syst. Rept.* 29.
Testudo, sp., *Schlegel.*

1. Pyxis arachnoides. The Pyxis.

Shell hemispherical, yellow and black varied, very variable in colour.

Pyxis arachnoides, *Bell, Linn. Trans.* xv. t. 16.
Gray, Syn. 16; *Cat. Tort. B.M.* 12.
Fitz. Syst. Rept. 29.
Dum. & Bib. Erp. Gén. ii. 156, t. 14. f. 1; *Cat. Méth. R.* 6.
P. Madagascariensis, *Lesson, Bull. Sci.* xxv. 120.
Testudo geometrica, var., *Schlegel, F. Japon.* 74.
Testudo (Pyxis) arachnoides, *Fitz. Syst. Schildk.* 122.
Pyxis arachnoides, *Wiegm.*

Hab. Madagascar; Isle of France. Mus. Bell (two specimens).

M. Schlegel (*Faun. Japon. Chelon.* 74) regards *Pyxis arachnoides*, Bell, as a variety of *Testudo geometrica*!

** Palmata. *Feet palmate; toes mobile; claws* 4 *or* 5, *elongate, acute* (p. 4).

Testudines lutrariæ, *Plin.*
Emys ou Tortues d'eau douce, *Brongniart, Institute*, 1805.
Oppel, Rept.
Cuv. R. A. ii. 10.
Elodites ou Tortues paludines, *Dum. & Bib. Erp. Gén.* ii. 171; *Cat. Méth. R.* 7.
Phyllopodochelones, *Ritzen.*
Steganopoda, *Fitz. Syst. Schildk.*
Amydæ, sect., *Oppel.*
Digitata (part.), *Merrem.*
Gymnopoti, *Latr.*
Phyllopodochelones, Chersydrochelones seu Amydæ, et Podochelones, Chersochelones seu Dysmydæ, *Ritzen.*
Steganopodes, *Wagler.*

† Rostrata. *Mouth rostrate, jaw incased with a horny sheath, not covered with fleshy lips*

Rostrata, *Fitz. Syst. Schildk.* 1836
Ohren Schildkroten, *Oken*
Emydoidea, *Fitz.*
Fluviales seu Elodites, *Dum & Bib*

Fam. II. EMYDIDÆ (Terrapens)

Head rather depressed, covered with a hard or soft skin, jaws with a naked horny beak, nostril small, apical. Neck retractile into the cavity of the thorax. Feet depressed, expanded; toes 5 5, 5 4 or 4 4, almost always webbed to the claws; claws sharp. Tail conical, shielded beneath. Thorax generally depressed, solid, with a distinct bony margin, covered with horny plates. Discal plates 13, marginal 24–26, caudal always separate, sternal shields 11 or 12, gular pair sometimes united. The vertebræ of the neck bent in a perpendicular bow. Pelvis only united to the vertebræ. Rapid, living in freshwater ponds. Carnivorous, eating molluscs, worms, insects and carrion, only taking their food while in the water. Egg oblong, white.

Emydidæ, *Gray, Ann. Phil.* x. 240 (1825), *Syn. Rept.* 17, *Cat. Tort. B.M.* 13.
Bell, Zool. Journ. ii. 511 (1828).
Emydæ, *Gray, Proc. Zool. Soc.* 1847, 33, *Syn. Rept.* 17 (1831).
Wiegmann & Ruthe, Handb. Zool. 166.
Fitz. Syst. Rept. 29 (1843).
Swainson, Lard. Cyclop. 344.
Emydina (part.), *Gray, Ann. Phil.* x. 240 (1825).
Emydina, *Bonap. Tab. Analyt.* 6 (1836).
Terrapenæ, *Bonap. Observ. Rev. Isam.* 153 (1839).
Testudinidæ, Testudininæ (part.), *Bonap. Saggio Anim. Vert.* 13 (1832).
Emydoides (part.), *Fitz. Neue Class.* (1826).
Emys (Tortues d'eau douce) (part.), *Bronyn Institute* (1805).
Oppel, Rept. (1811).
Cuv. R. A. ii. 10; ed. 2. ii. 10.
Merrem, Tent. 22.
Tortues à boite, *Cuv. R. A.* ii. 12.
Elodites ou Tortues Paludines (§ 1. Les Cryptodires), *Dum. & Bib. Erp. Gén.* ii. 171, 201; *Cat. Meth. R.* 7.
Phyllopodochelones (Chersydrochelones) (part.), *Ritzen, Nov. Act. Acad. Nat. Cur.* xiv. 269 (1828).
Testudines lutrariæ, *Plin. H. N.* xxxii. c. 4.
Podochelones (Dysmydæ) (part.), *Ritzen, l. c.* 270 (1828).
Chelidridæ (part.), *Swainson, Lard. Cyclop.* 343.

In some, perhaps in all the genera, the head of the males is larger and broader, the tail larger and longer, and more strongly clawed at the end, and the sternum more concave, as in the former family, than in the females.

Dr. Harlan observes that the females of some species are more keeled than the males, but this distinction is very doubtful, and requires verification.

SYNOPSIS OF THE GENERA.

A. *Head and tail moderate; sterno-costal suture simple.*

a. *Sternum solid, truncated before and nicked behind, attached to the thorax by a bony symphysis, covered with the end of the pectoral and abdominal shields; sternal plates* 12; *axillary and inguinal plates moderate or none.*

* *Pectoral plates small, short, triangular, lateral, far apart.*

1. **Manouria.**

** *Pectoral plates broad, square, close together, side by side.*

†* *Toes strong, free, not webbed, cross-shielded above.*

2. **Geocmyda.** Head covered with a thin hard skin. Toes rather short, free; claws 5·4.

†† *Toes strong, webbed, cross-shielded above.*

3. **Nicoria.** Head covered with a thin hard skin; eyes large, close together, subsuperior. Toes very short, united.

4. **Geoclemys.** Head covered with a thin hard skin, rhombic; forehead flat; eyes lateral. Toes strong, shortly webbed.

5. **Emys.** Head covered with a thin hard skin, broad, ovate; forehead convex; eyes subsuperior; branches of lower jaw narrow, covered with the beak. Toes short, strongly webbed.

6. **Chrysemys.** Head covered with a thin hard skin, oblong; forehead convex; eyes subsuperior. Sternum broad, rounded before and behind. Toes strongly webbed.

††† *Toes elongate, largely webbed, with small scales above.*

7. **Pseudemys.** Head covered with a thin hard skin, ovate; forehead convex; eyes subsuperior; branches of lower jaw dilated, flat, covered with a soft skin. Toes short, webbed.

8. **Batagur.** Head covered with a thin hard skin, broad, ovate; forehead convex; eyes subsuperior; branches of lower jaw narrow. Toes largely webbed.

9. **Malaclemys.** Head depressed, covered with a soft skin, ovate; forehead convex; eyes subsuperior. Toes broadly webbed.

b. *Sternum divided by a central cross suture, attached to the thorax by a ligamentous suture, covered by the end of the pectoral and abdominal shields; sternal plates* 12; *axillary and inguinal plates very small. Toes webbed.*

† *Legs scaly; toes slightly webbed.*

10. **Cistudo.** Head rhombic; forehead flat; eyes lateral. Sternum very broad; anterior lobe covered with the gular, humeral and pectoral plates, and quite free.

11. **Lutremys.** Head ovate; forehead convex; eyes subsuperior. Sternum broad; the suture between the two sternal lobes in the short sterno-costal suture.

†† *Legs with crescentic shields; toes broadly webbed.*

12. **Cuora.** Head rhombic; forehead flat; eyes lateral. Sternum very broad; anterior lobe partly included in the sterno-costal suture.

13. **Cyclemys.** Head ovate; forehead convex; eyes subsuperior. Sternum rather narrower than the cavity at each end; the cross suture between the two sternal lobes in the middle of the long sterno-costal suture.

c. *Sternum divided by two cross sutures; central lobe attached to the thorax by a bony symphysis, covered by the end of the abdominal shields only; sternal plates* 11 *or* 8; *the axillary and inguinal plates large. Toes webbed.*

14. **Kinosternon.** Sternal plates 11; gular plates united; humeral and pectoral distinct; pectoral triangular.

15. **Aromochelys.** Sternal plates 11; gular linear, rudimentary; pectoral broad, four-sided.

16. **Staurotypus.** Sternal plates 8; gular, humeral and pectoral united together.

B. *Head and tail very large; sterno-costal symphysis covered with one or three peculiar plates.*

a. *Sternum cross-like, acute before; sternal plates* 10, *with a broad one on each side, over the sides of the sternum.*

17. **Chelydra.** Head depressed, covered with a soft skin. Shell with a single series of marginal shields.

18. **Macroclemys.** Head large, high, covered with symmetrical horny plates. Shell with a double series of marginal shields on each side.

b. *Sternum broad, truncated before; sternal plates* 12; *sterno-costal suture covered with three or four additional plates.*

19. **Platysternon.** Tail cylindrical, shielded. Shell depressed.

20. **Dermatemys.** Tail —— ? Shell convex.

These genera pass gradually one into the other, and the similarity in the form of the sternum between *Platysternon* and *Emys* converts the series into a circle. The genus *Cistudo* appears to unite them to the Land Tortoises, while *Chelydra* has some affinities with certain of the *Chelydæ*.

A. *Head and tail moderate; sterno-costal suture simple.*

Emydina (part.), *Gray, Ann. Phil.* x. 210 (1825).
Emydidæ § A, *Gray, Cat. Tort. B.M.* 13 (1844).
Emys, *Gray, Syn. Rept.* 20.
Dum. & Bib. Erp. Gén. ii. 234; *Cat. Méth. R.* 8.

a. *Sternum solid, truncated before and nicked behind, attached to the thorax by a bony symphysis; sternal plates* 12; *axillary and inguinal plates moderate or none.* Emydina.

Emydidæ § A. *a, Gray, Cat. Tort. B.M.* 13.
Emydina (part.), *Gray, Ann. Phil.* x. 210.
Clemmys, *Wagler, Syst. Rept.* 137.
Fitz. Syst. Rept. 29 (1843).

* *Pectoral plates small, short, triangular, lateral, far apart.*

1. MANOURIA.

Animal unknown. Shell rather depressed; caudal plates double, separate. Sternum solid, broad, produced and

slightly nicked in front, with only five pair of broad shields; the pectoral shields being short, subtriangular, only occupying the angle between the outer edge of the humeral and abdominal shields; axillary shields small, inguinal larger; the areola of the discal shield central.

The depressed form and divided caudal plate induce me to place this genus in *Emydæ*. It most resembles *Testudo Gopher* in appearance, but is at once known from that species and all the other genera of *Testudinidæ*, *Emydæ* and *Chelydæ* by the peculiar form of the pectoral plates, which at first sight might be mistaken for a very large inguinal plate, if that plate were not also present. In this respect it somewhat resembles the genus *Kinosternon*, but there the plate is only narrow at the inner end and reaches nearly to the centre of the sternum.

The various genera of *Testudinidæ* have the pectoral plates much smaller than the others, and perhaps the small size of the plate in this genus shows its affinity among the *Emydinæ* to that family; and were it not for the regular division of the caudal and the form of the pectoral plates, it might be regarded as nearly allied to the very variable *Testudo Indica*.

1. Manouria fusca. Brown Manouria. Tab. III.

Pale brown, nearly uniform. Discal shield concentrically grooved, with a central areola; the anterior and posterior lateral margins acute, slightly sinuated and rather bent up; the humeral and abdominal plates longer than broad, the abdominal very large; gular produced, narrowed in front.

Geoemyda spinosa, adult, *Cantor, Rept. Malay. Penins.* 1.
Manouria fusca, *Gray, Proc. Zool. Soc.* 1852, 133; *Ann. & Mag. Nat. Hist.* 1853, xv. 68.

Hab. Pinang.

a. Shell only, in bad state, wanting many of the horny discal shields; front of the sternum acutely notched. Pinang. From the Zoological Society.

b. Shell only: adult. In a bad state; front of the sternum deformed and worn nearly round. Pinang, Hills. From Dr. Cantor's Collection. Presented by the Hon. East India Company.

"Geoemyda spinosa, *Cantor*."

"Found on the great hill at Pinang at a distance from water."—*Cantor*.

Dr. Cantor's description of the animal is copied from the generic character of the genus *Geoemyda* in this Catalogue, and therefore has no special relation to the animal of this genus.

** *Pectoral plates broad, square, close together, side by side.*

† *Toes strong, free, not webbed, covered with a series of plates above.*

2. GEOEMYDA.

Head covered with a thin hard skin, oblong; forehead rather convex. Eyes subsuperior. Branches of the lower jaw narrow, rounded, covered with the beak. Chin not bearded. Legs strong, not fringed behind, covered with large triangular scales. Toes strong, short, free to the base, covered above by a series of shields; claws 5-4, short, curved. Hind foot with a distinct rudimentary clawless fifth toe. Tail tapering. Shell depressed, keeled; areola of dorsal shields posterior, marginal; hinder edge strongly toothed. Sternum solid, broad, truncated before, nicked behind; shields six pair, subequal; pectoral shields broad; gular plate linear, band-like, small; axillary and inguinal plates small. The sternum is often concave, like *Testudo*.

This genus differs from *Emys* in the toes being quite free.

Geoemyda, *Gray, Proc. Zool. Soc.* 1834; *Cat. Tort. B.M.* 14.
Geocmys, "*Gray*," *Bonap. Tab. Analyt.* 7 (1836).
Emys, sp., *Gray, Syn. Rept.* 20.
Dum. & Bib. Erp. Gén.; *Cat. Méth. R.*
Testudo, sp., *Müller, Verhand.*
Dum. & Bib. MSS.; *Cat. Méth. R.* 4.
Chelonura, sp., *Bonap. Obs. Cuv. R. A.* 171 (1836).

1. Geoemyda spinosa. The Spinose Land Emys.

Shell oblong, subquadrate, keeled, flattened above, chestnut-brown, front and hinder edge strongly serrated; vertebral plates broad, first subcircular; costal plates with a posterior, subsuperior areola, with a slight subconic tubercle; beneath yellow, brown-rayed. *Young* depressed, pale brown, bluntly keeled, with a distinct spine in the areola of each discal plate.

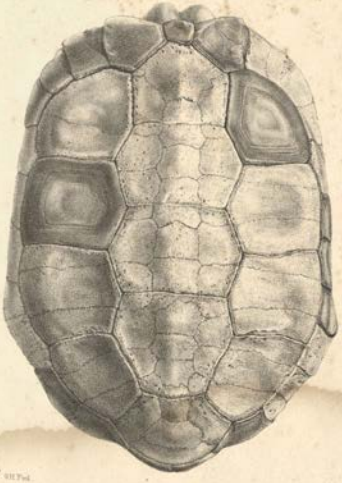
Geoemyda spinosa, *Gray, Proc. Zool. Soc.* 1834; *Illust. Ind. Zool.* t. . f. 2; *Cat. Tort. B.M.* 14.
Emys spinosa, *Gray, Syn.* 20; *Illust. Ind. Zool.* t. . f. 1 (young).
Bell, Test. t. 1, young.
Dum. & Bib. Erp. Gén. ii. 327; *Cat. Méth. R.* 15.
"E. bispinosa," *Schlegel.*
Testudo Emys, *G. Müller, Verh. Rept.* 34. t. 4 ? (1844); (vertebral plates not keeled).
T. Emydoides, *Dum. & Bib. MSS.*; *Cat. Méth. R.* 4.

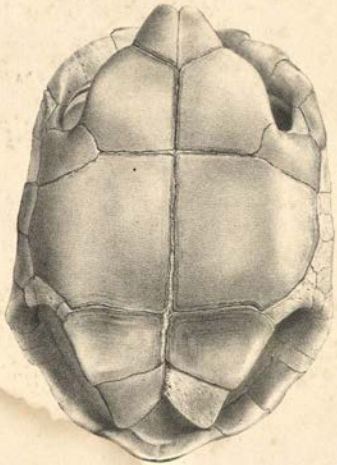
Hab. Pinang (*Cantor*); Sumatra (*Müller*); Java (*Duméril*).

a. Adult (stuffed); 8 inches. Sumatra. River Auch.

b. Young (in spirits). Sumatra. From the Leyden Museum.

"Testudo Emys, *G. Müller*."





MANOURIA FUSCA

c and *d*. Young and adult (stuffed). Pinang, Singapore. Mr. Wallace's Collection.

Young. Head and neck brown, with a large irregular yellow spot on each side of the nape. Costal shield with a small spine in the hinder edge of each areola.

The forehead covered with large, the occiput and the hinder part of the branches of the lower jaw with smaller, flat, symmetrical plates, which are more distinct in the younger specimens.

†† *Toes short, strong, covered above with transverse shields, united by a scaly web to the claws; claws curved.*

3. NICORIA.

Head covered with a thin horny skin; forehead narrow. Eyes very large, rather close, subsuperior. Upper beak very strong, acute. Legs strong, not fringed behind, covered with thick triangular scales, forming a series on the outer side of the front. Toes very short, united, free just at the end, covered above with band-like shields. Hind foot narrow, with a very obscure rudiment of a fifth toe, only to be seen in the skeleton or in the dry contracted state. Claws 5·4, curved. Shell depressed, three-keeled; areola of dorsal shield posterior, marginal; hinder edge strongly toothed. Sternum solid, broad, truncated before, nicked behind; shields six pair, subequal; pectoral shields broad, square; gular small; axillary and inguinal plates rudimentary or wanting. Africa.

1. Nicoria Spengleri. SPENGLER'S NICORIA.

Shell oblong, depressed, pale brown, three-keeled; keels continuous, distant, black-edged; hinder edge deeply serrated; vertebral shields quadrate; sternum black, yellow-edged. Animal olive, red dotted, with a white streak on each side of the neck.

Testudo Spengleri, *Wulb. Berlin Naturf.* vi. 122. t. 3.
Gmel. Syst. Nat. i. 1043.
Emys Spengleri, *Daud. R.* ii. 103.
Schweig. Prod. 310.
Merrem, Amph. 23.
Gray, Syn. 21.
Dum. & Bib. Erp. Gén. ii. 308; *Cat. Méth. R.* 15.
Geoemyda Spengleri, *Gray, Proc. Zool. Soc.* 1834; *Cat. Tort. B.M.* 14.
Testudo serrata, *Shaw, Zool.* iii. 50. t. 9.
T. serpentina, var., *Latr. Rept.* i. 163.
T. tricarinata, *Bory, Voy. Isl. Afric. Atlas*, t. 37. f. 1.
Chelonura serpentina (part.), *Bonap. Obs. Cuv. R. A.* 171.

Hab. Africa? China.

a. Adult; animal dry (shell lost two scales); 3¼ inches. China. Presented by John Russell Reeves, Esq.

c. Adult (in spirits). From the Zoological Society.

OSTEOLOGY:—

b. Half-grown shell; the ossification incomplete on the entire circumference. Africa.

Schlegel, in the *Fauna Japonica*, confounds *Emys crassicollis, E. Thurgi, E. Reevesii* and *Cistudo. dentata* with this species, but they do not even belong to the same natural genus. It appears to be rare on the Continent, as it is wanting in the Paris and Leyden Museums.

Latreille and Prince Bonaparte confound this species with *Chelonura serpentina*.

4. GEOCLEMYS.

Head moderate, covered with a thin hard skin; forehead flat; cheeks perpendicular. Eyes lateral. Chin not bearded. Fore-legs covered with broad lunate scales. Toes short, strong, covered with transverse shields above, slightly webbed. Claws 5·4. Tail moderate. Shell depressed. Sternum solid, broad, truncated before, nicked behind; affixed to the thorax by a bony symphysis, covered by the ends of the pectoral and abdominal plates; axillary and inguinal plates moderate, distinct. Asiatic and American.

Emys, sp., *Bronguiart and others*.

This genus contains the more terrestrial and solid-shelled Terrapens with webbed feet; their head is more square and flat-topped than in their more aquatic congeners; and they have the eyes on the side of the face. The skull is square, with a broad flat forehead; the orbits being placed quite on the side of the head and not interrupting the outline of the forehead, as in the more aquatic *Emydes*.

These animals are essentially aquatic, but often leave the water for months together. They are very active and restless.

* *Back three-keeled; keels interrupted, nodose.*

** *Back three-keeled; keels continued.*

*** *Back one-keeled; shields radiate, concentrically grooved.*

**** *Back not keeled, depressed; shields thin, spotted.*

* *Back three-keeled, spotted; areolæ rugose, each with a very broad nodose longitudinal ridge; hinder edge entire or subdentate.* Asiatic.

1. Geoclemys Hamiltonii. HAMILTON'S EMYS.

Shell oblong, convex, solid, with three interrupted keels, slightly toothed behind, black, yellow-rayed; shield convex, areolæ rugose, with a large irregular central keel;

sternum keeled on the sides, black, yellow-varied. Head and body black, yellow-spotted.

Emys Hamiltonii, *Gray, Syn.* 21. 72; *Cat. Tort. B.M.* 19. *Dum. & Bib. Erp. Gén.* ii. 316; *Cat. Méth. R.* 14.
E. guttata, *B. Hamilton, MSS.*
Gray, Illust. Ind. Zool. t. 9. f. 1, not *Schweig.*
E. Picquotii, *Lesson, Delanger, Voy.* 294.

Hab. India; Bengal. Common in ponds.

a. Animal (in spirits). India; Bengal. From M. Picquot's Collection.

b. Animal (stuffed). India; Bengal. From M. Picquot's Collection.

The head is rhombic; the forehead flat, rather convex over the eyebrows.

*** Back three-keeled; keels continued.* Asiatic.

2. **Geoclemys Reevesii.** Reeves' Emys. Tab. V.

Shell oblong, very convex, black (pale brown when dead), obscurely three-keeled; keels distant, lateral and continued; vertebral shields broad, six-sided; margin entire; the second pair of sternal shields subtriangular, narrow at the inner edge; inguinal and axillary plates large. Head black, cheek and neck yellow-lined.

Emys Reevesii, *Gray, Syn. Rept.* 73.
Dum. & Bib. Erp. Gén. ii. 315; *Cat. Méth. R.* 14.
E. Spengleri, var., *Schlegel, Faun. Japon.* 51.

Hab. China.

a. Adult, dry; 2¼ inches. China. Presented by J. R. Reeves, Esq.

c. Adult, stuffed. China. Mr. Bartlett's Collection.

Osteology:—

b. Shell of adult; 2¼ inches. China. Presented by J. R. Reeves, Esq.

M. Schlegel also refers this most distinct species to *Geoemyda Spengleri*. It is much like *E. Hamiltonii* in general appearance, but differs in the keel being continued.

Head rhombic; crown flat, when dry rather convex over the orbits, smooth, brown, with a few pale dots; cheeks with a short broad white line from the middle of the hinder edge of the orbits. Tympanum edged with a white lunate band above; eyes lateral; lower beak pale, brown-varied, with a broad short pale streak from its hinder edge. Toes short. The first vertebral plate broad, only slightly contracted behind.

The second specimen (Tab. V.) has the same marks, but they have been rather distorted in the stuffing.

3. **Geoclemys Seba.** Seba's Emys.

Shell ovate, convex, brown, entire, three-keeled; keels continuous, yellow, lateral ones arched; vertebral shield broad; marginal plates very broad; sternum flat, keeled on the sides, brown, with a pale streak on each side. Head red spotted and streaked; feet brown; toes scarcely webbed.

Seba, Thes. i. t. 79. f. 12.
Emys Seba, *Gray, Syn. Rept.* t. 75; *Cat. Tort. B.M.* 19.
E. thermalis, *Reyneau, in Lesson, Cent. Zool.* 89. t. 29.
Emys trijuga?, *Kelaart, Prod. F. Zeylan.* 177.

Hab. Ceylon.

a. Young, in spirits. Ceylon. Mr. Cuming's Collection.

b. Young; rather older than *a*. Trincomalee. Presented by Mr. Edward Gerard.

Shell brown, with three pale keels; marginal shield with a linear marginal spot; under side black, with a broad white edge on each side of the sternum, and a narrow line in front. Head black, with symmetrical pale spots on the crown, face and chin; a large round white spot behind the hinder angle of the eyelids, commencing a broad, more or less interrupted streak on the upper part of the side of the neck. Feet and legs black, with a few small white specks on the front of the legs.

**** Back one-keeled; shields radiately and concentrically grooved.* North America.

4. **Geoclemys pulchella.** The Engraved Geoclemys.

Shell oblong, depressed, keeled in front, hinder edge slightly reflexed; shields radiately and concentrically grooved, minutely yellow and black dotted, areola small; nuchal slender; sternum yellow, areola posterior, marginal, black. Animal chestnut-brown.

Emys pulchella, *Schweig. Prod.* 303 (not *Schoepff.*).
Dum. & Bib. Erp. Gén. ii. 251; *Cat. Méth. R.* 9.
Gray, Cat. Tort. B.M. 20.
E. scabra, *Say, Journ. Acad. Nat. Sci. Philad.* iv. 204 (not *Linn.*).
Testudo insculpta, *Leconte, Ann. Lyc. N. Y.* iii. 112.
Holbrook, N. A. Herpet. i. 93. t. 13.
De Kay, 14. t. 4. f. 8.
Emys speciosa, *Bell, MSS.*; *in Gray, Syn.* 26 (var. shield smooth).
Holbrook, N. A. Herpet. iii. 17. t. 2.
E. inscripta, *Mus. Par.*
E. Muhlenbergii, var., *Schlegel, Faun. Japon.* 56.
Terrapene scabra, *Bonap. Obs. Cuv. R. A.* 157.
"Testudo scabra," *Linn. Syst. Nat.* i. 351 (not *Gmelin* nor *Bonap.*).

Hab. North America.

a. Adult (stuffed). Female. North America; Pennsylvania.

EMYS REEVESII

Osteology :—

b, c. Skeleton of male and female. North America; Pennsylvania.

The skull subquadrangular; forehead broad, quite flat, rather raised over the nostrils; sides of the head perpendicular, flattened. Nose truncated; orbits lateral, not interrupting the outline of the forehead; temples rather contracted behind; branches of the lower jaw narrow, compressed.

5. Geoclemys Muhlenbergii. The Two-Spotted Geoclemys.

Shell oval-oblong, smooth, low, slightly keeled, contracted on the sides; shields slightly radiately and concentrically grooved, chestnut, with yellow areola and rays; nuchal linear. Head blackish, with two large, irregular, fulvous, occipital spots.

Emys Muhlenbergii, *Schweig. Prod.* 310.
Gray, Syn. 25; *Cat. Tort. B.M.* 20.
Dum. & Bib. Erp. Gén. ii. 304; *Cat. Méth. R.* 12.
Holbrook, N. A. Herpet. i. 59. t. 5; ed. 2. i. 45. t. 4.
De Kay, Zool. N. York, 17. t. 8. f. 15.
Testudo Muhlenbergii, *Schoepff. Test.* 132. t. 31.
Leconte, Ann. Lyc. N. Y. iv. 205.
Emys biguttata *or* bipunctata, *Say, Journ. Acad. Nat. Sci. Philad.* iv. 205, 212.
Chersina Muhlenbergii, *Merrem, Tent.* 30.
Terrapene Muhlenbergii, *Bonap. Obs. Cuv. R. A.* 160 (1830).

Hab. North America, New Jersey and East Pennsylvania.

a. Adult (stuffed). North America. From the Zoological Society.

Schlegel regards *Testudo insculpta*, Leconte, *E. speciosa*, Bell, as a variety of this species!—*Fauna Japonica.*

******** *Back not keeled, depressed; shields thin, spotted.* North America.

6. Geoclemys guttata. The Speckled Geoclemys.

Shell ovate, depressed, dilated behind; shields smooth, black-brown with round yellow spots; nuchal linear; sternum yellow, brown-varied. Head yellow-spotted; throat yellow-lined.

Emys guttata, *Schweig. Prod.* 309, 433.
Gray, Syn. 26; *Cat. Tort. B.M.* 26.
Dum. & Bib. Erp. Gén. ii. 295; *Cat. Méth. R.* 12.
Holbrook, N. A. Herpet. ii. 25. t. 4; ed. 2. i. 81. t. 11.
De Kay, Zool. New York, 13. t. 6. f. 12.
Testudo guttata, *Bechst. in Lacép.* Q. O. i. 310.
Shaw, Zool. iii. t. 10.
T. punctata, *Schneid. Schildk.* 30; *Berlin Naturf.* x. 264.
Daud. R. ii. 159. t. 22.
Latr. Rept. i. 110.
Testudo punctata, *Schoepff. Test.* t. 5.
Leconte, Ann. Lyc. N. Y. iii. 117.
T. annoyma, *Schneid. Schildk.* 30.
Gothw. Schildk. f. 15.
T. terrestris amboinensis, *Seba*, i. t. 80. f. 7.
Terrapene punctata, *Bonap. Obs. Cuv. R. A.* 159 (1830).
Cyclemys punctata, *Wagler, Syst.* 137. t. 5. f. 6, 7.
Emys punctata, *Merrem, Amph.* 24.
Say, Journ. Acad. Philad. iv. 205, 212.
Harlan, A. H. 77.

Hab. North America.

a. Adult (stuffed). Presented by Henry Doubleday, Esq.

b. Adult (animal dry). Spots on back few and large. North America.

c. Adult (stuffed). Broad, depressed; spots few, large. North America.

d. Adult (stuffed). Body narrower, higher; spots numerous. North America.

e. Adult (in spirits).

f, g & *h.* Adult (in spirits). North America. Presented by Dr. J. E. Gray.

Osteology :—

i. Skeleton of adult. North America. From the Paris Collection.

Forehead flattened, rather rounded in front over the nose; nose truncated; cheeks perpendicular; orbits lateral; temples nearly parallel, scarcely contracted behind; lower jaw narrow.

5. EMYS.

Head moderate, covered with a thin hard skin, oblong; forehead convex. Eyes subsuperior. The branches of the lower jaw narrow, rounded beneath, and covered with the hind part of the horny beak. Chin not bearded. Fore legs covered with broad lunate scales in front. Toes short, strong, shielded above, webbed to the claws. Claws 5·4, curved. Tail moderate. Shell depressed. Sternum solid, broad, truncated before, nicked behind, affixed to the thorax by a bony symphysis, covered by the ends of the pectoral and abdominal plates; axillary and inguinal plates moderate, distinct.

Emys, sp., *Brongniart.*
Fleming, Phil. Zool. ii. 270 (1822).
Gray, Syn. Rept.; *Cat. Tort. B.M.* 15.
Wiegm. & Ruthe, Handb. 166.
Bell, Zool. Journ. iii. 515 (1828).
Dum. & Bib. Erp. Gén. ii. 230; *Cat. Méth. R.* 8.
Emys § 2, *Gray, Ann. Phil.* x. 210 (1825).
Clemmys, *Wagler.*
Fitz. Syst. Rept. 29 (1843).
Terrapene, *Bonap. Obs. Rep. Anim.* 153 (1830).

SYNOPSIS OF SECTIONS.

* *Back three-keeled; vertebral plates elongate, subtrigonal.* Asiatic.

** *Back three-keeled; vertebral plates broad, square.* Asiatic.

*** *Back more or less one-keeled, often becoming keelless.* Old and New Worlds.

* *Back three-keeled; vertebral plates elongate, subtrigonal; areola of discal shields with a narrow longitudinal ridge; hinder edge subdentate or entire.* Asiatic.

1. **Emys crassicollis.** The THICK-NECKED EMYS.

Shell ovate, oblong, rather convex, black, slightly three-keeled; keels close; vertebral plates elongate, six-sided; sides revolute, hinder edge serrated; sternum flat, pale, and keeled on the sides. Head and neck thick, black.

Emys crassicollis, *Bell, MSS. in Gray, Syn.* 21. t. 7. f. 3; *Illust. Ind. Zool.* t. 9. f. 2; *Cat. Tort. B.M.* 16.
Dum. & Bib. Erp. Gén. ii. 325; *Cat. Méth. R.* 14.
Cantor, Cat. 3.
E. Spengleri, var., *Schlegel, F. Japon.* 51.

Hab. Sumatra and Pinang (*Cantor, Cat.* 3); Batavia, Java (*Quoy*); Borneo (*Schlegel*).

b. Animal and shell (half-grown; *in spirits*). Sumatra. From the Leyden Museum.

c. Adult (stuffed). Keels on sides of sternum yellow. India.

d. Adult (stuffed). Sternum uniform black. India.

e. Half-grown (in spirits). Shell brown, having a bronzed appearance; vertebral plates distorted. Head brown, with a white spot over and rather before each eye, on the side of the chin, and on each side of the nape, surrounding the back edge of the tympanum, and indistinctly continued across the throat; a small white streak on the middle of the black tympanum. Sumatra. Mr. Bartlett's Collection.

OSTEOLOGY:—

a. Shell only; 4¾ inches long. Sumatra. Presented by Thomas Bell, Esq.

f. Adult shell (very old). Ceylon. Presented by Dr. Kelaart.

Fore legs with large, irregular, transverse plates on the inner side of the front, and a row of large, triangular, compressed, keeled scales on the outer. Toes short, strong, with a series of band-like scales above; webs scaly. Hind legs granular, with a few large scales on the outer, and small close ones on the inner margin.

"They are numerous in Pinang, inhabiting rivulets and ponds in the valleys. The throat is whitish, and a small white spot appears on each side of the occiput; the vertebral keels and the lateral spines become obliterated with age. It feeds on frogs, and also upon shell-fish and animal offal, and is often taken by the angler with the hook."—*Cantor.*

M. Schlegel could never have observed *Nicoria Spengleri*, or he would not have confounded it with this species.

** *Back three-keeled; vertebral plates broad, square.* Asiatic.

2. **Emys trijuga.** The THREE-KEELED EMYS. TAB. IV.

Shell convex, oval, brown, three-keeled; keels rather interrupted; margin slightly toothed; shields rugose, areola marginal, posterior, rugose; first vertebral plate five-sided, keeled, rather narrower behind; others six-sided, rather longer than broad; sternum rather convex on the sides, blackish. Head brown, with a yellow streak over each eye; beaks yellow-varied.

Emys trijuga, *Schweig. Prod.* 310.
Dum. & Bib. Erp. Gén. ii. 310; *Cat. Méth. R.* 15.
Gray, Cat. Tort. B.M. 16.
E. Belangeri, *Lesson, Voy. Ind.* 291, young.
Testudo scabra, *Shaw, Zool.* iii. 55, *from Seba*, i. 126. t. 79. f. 1, 2.

Hab. India; Pondicherry; Malabar; Bengal; ponds at Calcutta.

a. Adult (animal and shell). Under side of marginal shield and edge of sternum yellow; dorsal keels black. Compared with the specimens in the Paris Museum. Presented by Dr. J. E. Gray.

OSTEOLOGY. TAB. XXXVII. f. 2, skulls.

c. Adult skeleton. Margin of shell revolute. Head narrow, rather small (a female?). From the Leyden Collection.

"Emys subtrijuga, *Mus. Leyden.*"

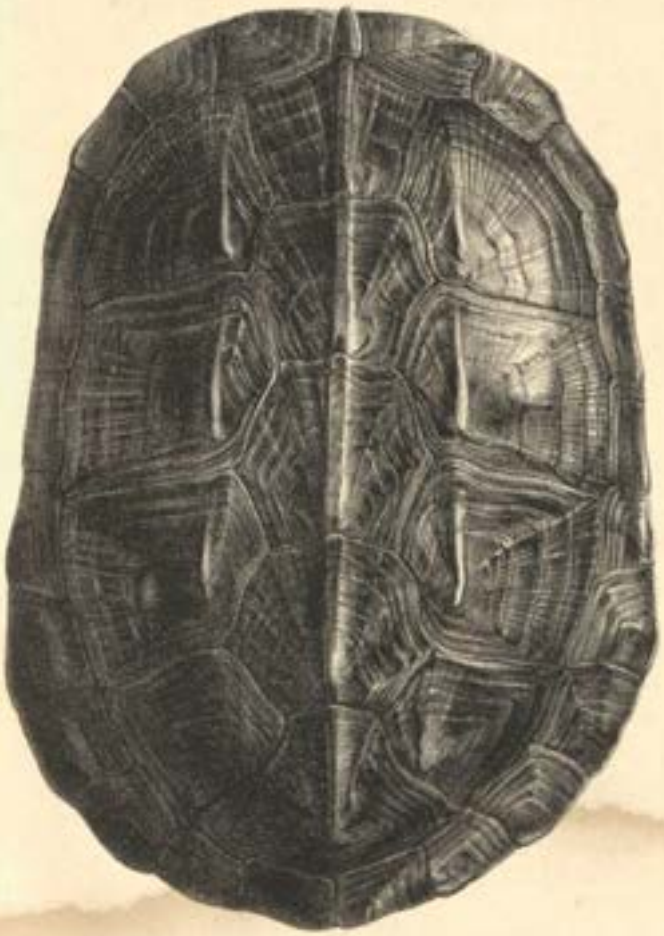
b. Adult skeleton. Under side of margin and edge of sternum black; dorsal keels yellow; margin of shell not revolute. Head broad, large; forehead rather convex, (a male?). India. From the Vienna Museum.

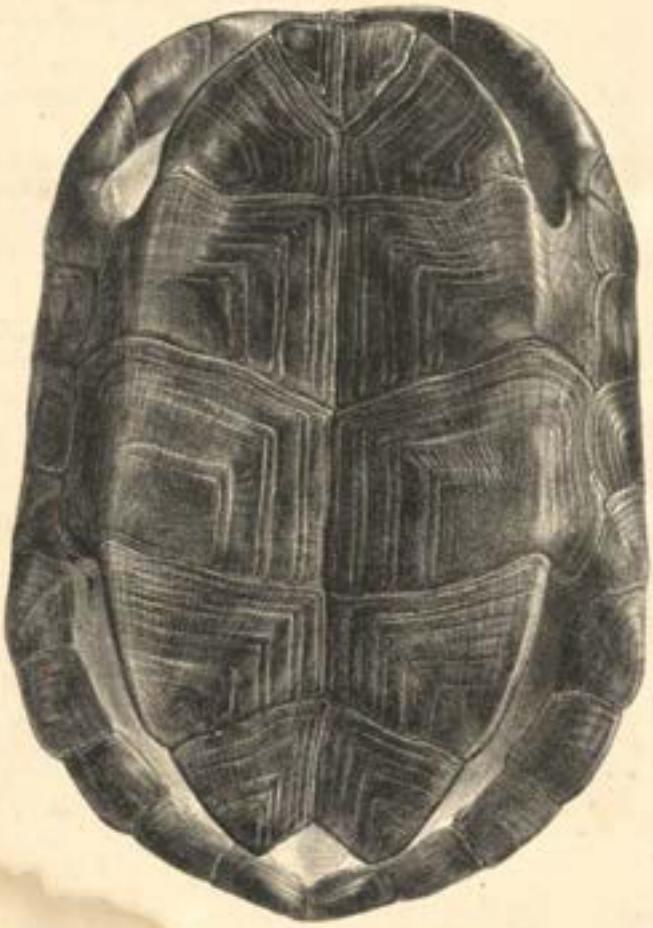
"Emys Hermanni," *Schw.? Mus. Vienna.*

Skull depressed; forehead flat, rather convex over the orbits; sides of the face slightly shelving; cheeks and temples rather convex; orbits large, slightly intruding on the outline of the forehead.

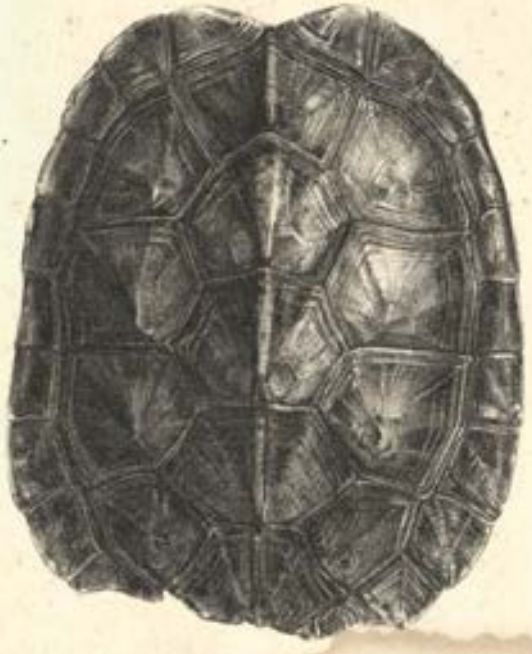
3. **Emys nigricans.** The BLACKISH EMYS. TAB. VI.

Shell ovate, oblong, rather convex, revolute on the sides and slightly toothed behind, brown, slightly three-keeled, the central keel prominent, blunt, interrupted in front and continued behind, the lateral keels far apart, indistinct

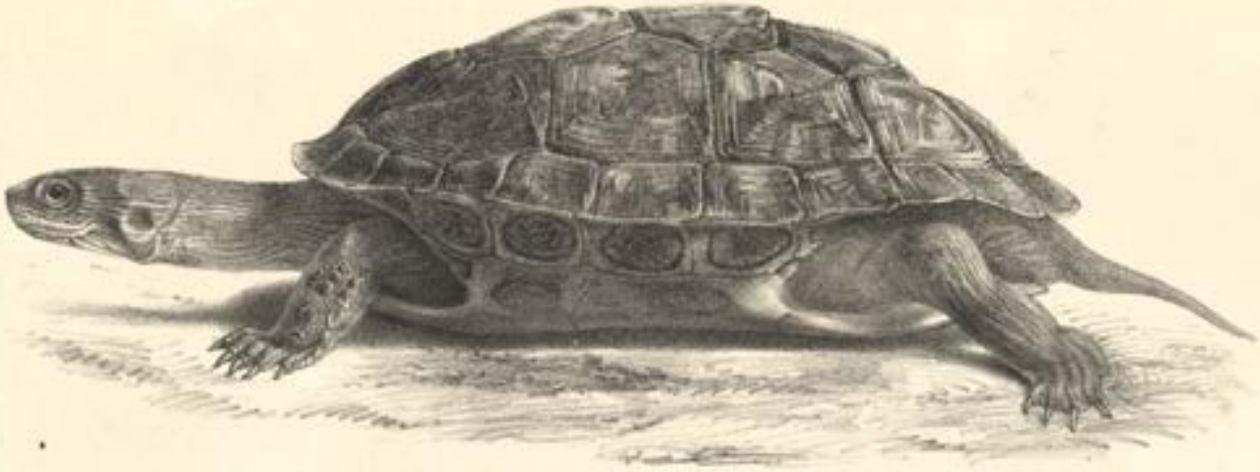


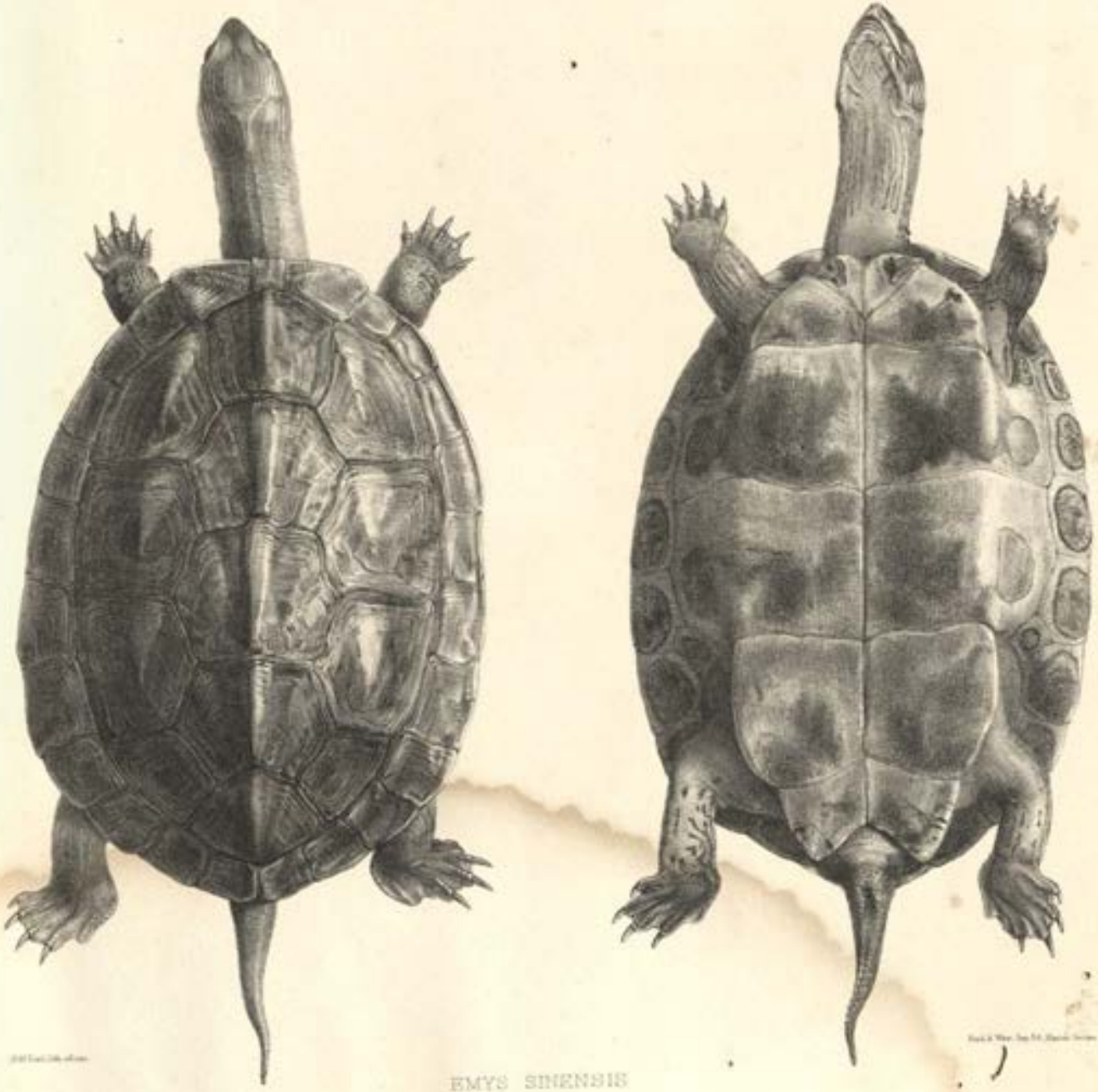


EMYS TRIJUGA.



EMYS NIGRICANS





EMYS SINENSIS

EMYS BEALII.

and interrupted; shield radiately striated, blackish-rayed; areola of vertebral plates posterior, marginal, of costal plates superior, submarginal; nuchal plate none; margin yellow-spotted beneath; sternum convex, rounded on the side; axillary plate moderate, inguinal large. Animal black; neck with three or four yellow lines on the side; chin and throat yellow, black-varied.

Emys nigricans, *Gray, Proc. Zool. Soc.* 1834; *Cat. Tort. B.M.* 18.

Hab. China.

c. Adult (stuffed). China? From the Zoological Society.

a. Young animal (dry, from spirits); $2\frac{3}{4}$ inches long. China; Canton. Presented by the Hon. East India Company. From Dr. Cantor's Collection.

Emys mutica, *Cantor, Ann. Nat. Hist.* 1842; *Gray, Cat. Tort. B.M.* 18.

OSTEOLOGY:—

b. Shell and head (dry), margin broken; $2\frac{1}{2}$ inches. China. Presented by J. R. Reeves, Esq.

Dr. Cantor's specimens of *E. mutica* only differ from the larger specimen in the Museum in the plates being worn.

Head of the dry specimen uniform brown, showing no appearance of any pale marks. Forehead rather convex. Eyes subsuperior.

The head covered with a thin skin; neck granular; the fore legs with two series of broad band-like shields on the inner and a series of narrower longer shields on the outer side. Toes covered with scales with a broad web, and with three or four band-like scales above near the claws. Claws black, curved; the hinder stronger. Allied to the genus *Batagur*.

4. Emys sinensis. The CHINESE EMYS.

Shell ovate, convex, slightly three-keeled, olive, black-speckled; shields smooth, with a central orange streak; vertebral shields broad, six-sided, first narrowest, as long as broad; areola of vertebral plates posterior, marginal, of costal subcentral, subposterior; margin entire, rather revolute in front, and expanded over the leg behind, beneath yellow, with an oval, rather posterior, black-edged olive spot; sternum high, slightly keeled on the sides. Head and neck olive, with narrow yellow lines.

Emys sinensis, *Gray, Proc. Zool. Soc.* 1834; *Cat. Tort. B.M.* 17.

Hab. China; Canton.

a. Adult (stuffed); 4 inches long. China. Presented by John Reeves, Esq.

Toes broadly webbed. Head elongate; forehead rather convex; eyes subsuperior.

*** *Back more or less one-keeled, often becoming keelless; areola of costal plates simple; hinder edge entire or nearly so.*

† *Asiatic.*

5. Emys Thurgii. The THURGI.

Shell oblong, rather convex, olive-brown; margin yellowish, rather toothed behind; vertebral plates, first quadrate, broader behind, second and third broad, six-sided; sternum olive, slightly keeled on the sides. Head olive, with a broad yellow band from the nostrils, over the eyebrows, along the side of the neck; feet olive, yellow-spotted.

Emys Thurgii, *Gray, Syn.* 22. 72; *Cat. Tort. B.M.* 17. *Dum. & Bib. Erp. Gén.* ii. 318; *Cat. Méth. R.* 14.
Testudo Thurgii, *B. Hamilton, MSS.* cop. *Gray, Illust. Ind. Zool.* t.
Emys flavo-nigra, *Lesson, Bull. Sci.* xxv. 12, and *Bélanger, Voy.* 22.
E. Spengleri, var., *Schlegel, Faun. Jepon.* 51.

Hab. India, Bengal; Pinang (*Cantor*).

a. Adult (stuffed); 13 inches. Blackish-brown; under side of marginal plate yellow-edged. India, Bengal. From M. Picquot's Collection.

b. Young (dry); 5 inches. Shell keeled; the hinder edge of the second and third vertebral plates subacdose; the middle of the vertebral and the upper part of the lateral costal shields and the hinder costal shield blackish; the marginal shields pale-edged. India, Bengal.

M. Schlegel also refers this species, which he has not seen, to *Geoemyda Spengleri*. It has not the slightest affinity to it, and is ten times the size!

The head ovate; forehead rather convex; eyes rather close together, subsuperior; front of legs with broad lunate scales. Toes broadly webbed.

6. Emys Bealii. BEALE'S EMYS. TAB. VIII.

Shell ovate, oblong, solid, rather convex, olive, black-dotted; back slightly contracted and keeled behind, hinder edge rather expanded, entire; vertebral shields transverse, six-sided; sternum rather paler, black-spotted and lined. Head yellowish, black-spotted; chin and cheek yellow-marked; occiput with two large eyed spots; neck scarlet-lined, with three broader distant streaks on the upper side.

Emys Bealii, *Gray, Proc. Zool. Soc.* 1834; *Cat. Tort. B.M.* 17. *Dum. & Bib. Erp. Gén.* ii. 325; *Cat. Méth. R.* 14.
Cistudo? Bealii, *Gray, Syn.* 71.

Hab. China (*Reeves*).

a. Adult (stuffed). Under sides with hard dark blotches. China. Presented by J. Reeves, Esq.

Osteology :—

b. Adult shell. Under sides brown dotted and lined. China. Presented by J. Reeves, Esq.

Head moderate; forehead nearly flat; eyes sublateral. The fore legs with a single series of very broad lunate thin scales. Toes broadly webbed; claws narrow, elongate.

7. Emys Bennettii. Bennett's Emys. Tab. X.

Shell oblong, rather convex, bluntly and subtubercularly keeled, expanded and entire behind; shields dark horn-colour, concentrically grooved, with a broad blackish edge; the vertebral shields as broad as long; first squarish, five-sided, convex; second, third and fourth six-sided, blunt, keeled on the hinder half; fifth rounded in front, three-sided behind, nuchal plate oblong; beneath yellow, with the middle of the sternal plates, all but the edge of the axillary and inguinal plates, and a very large spot rather nearer the hinder edge of the marginal shields, black. Animal olive. Head with symmetrical, narrow, dark-edged, curved lines on the crown; temples with several narrow dark-edged longitudinal streaks; neck with numerous narrow yellow lines. Legs yellow-lined.

Emys Bennettii, *Gray, Desc. Rept. Cat.* (ined.) 13. n. 32; *Cat. Tort. B.M.* 21.

Hab. China?

a. Stuffed (adult). China? From the Zoological Gardens.

b. Adult (stuffed). Plate worn and discoloured from having been kept in confinement. China? From the Gardens of the Zoological Society.

8. Emys Japonica. The Isigame.

Shell oblong (when young suborbicular, strongly denticulated behind), ochraceous yellow above, black beneath; shield concentrically striated, becoming smooth; vertebral shields broad, six-sided. Temples black-lined; upper jaw not nicked.

Emys Japonica, *Gray, Cat. Tort. B.M.* 19.
Dum. Cat. Méth. R. 8.
E. palustris, var. Japonica, *Schlegel, Faun. Japon.* t. 8. f. 1–4 young, t. 9 adult.
E. vulgaris, var. Japonica, *Schlegel, Faun. Japon.* 53; *Abbild. N. Amph.* 127. t. 42.

Hab. Japan.

a & *b*. In spirits (adult and half-grown). Japan. From the Leyden Museum.

The younger specimen is like *E. Caspica*, but more depressed and paler above, and the areolas of the costal plates are rather more central.

†† *European or North African.*

9. Emys Caspica. The Caspian Emys.

Shell ovate, oblong, depressed, olive, with black-edged yellow netted lines; shields flat, vertebral broad, six-sided; sternum flat, black and yellow varied. Head, neck and feet yellow-lined.

Testudo Caspica, *Gmel. Reise*, iii. 59. t. 10, 11; *Syst. Nat.* i. 1042.
Emys Caspica, *Schweig. Prod.* 298.
Dum. & Bib. Erp. Gén. ii. 235; *Cat. Méth. R.* 8.
Bichw. Faun. Casp. Cauc. 45. t. 3, 4.
Gray, Cat. Tort. B.M. 19.
Wagler, Syst. t. 5. f. 1–3; *Amph.* t. 24.
Emys lutraria, var. δ, *Merrem, Tent.* 25.
E. Syriaca, *Licht. Berl. Mus.*
E. vulgaris, *Gray, Syn.* 24.
Schlegel, Faun. Japon. 53.
E. palustris v. Dalmatica, *Schlegel, Faun. Japon.* t. 8. f. 4.
E. Sigritzii, *Michahelles, Isis*, 1829, 1295.
E. Sigritz, *Dum. & Bib. Erp. Gén.* ii. 240; *Cat. Méth. R.* 9.
E. lutraria, *Bell. Test.* t. 1, 2.
Gray, Griffith's A. K. t.
E. leprosa, *Schweig. Prod.* 298.
E. marmorea, *Spix, Bras.* 13. t. 10.
Gray, Syn. 28.
Dum. & Bib. Erp. Gén. ii. 248; *Cat. Méth. R.* 9.
E. rivulata, *Valenc. Zool. Morea*, t. 9. f. 2, 3.
? E. Iberica, *Valenc. Zool. Morea*, t. 9. f. 1?
E. Europæa, *Eichw. Zool. Spec.* iii. 196.
E. Caspia, *Eichw. Zool. Spec.* iii. 196.
Clemmys Caspica, *Wagler, Syst.* 137. t. 5. f. 1–5; *Icon. Amph.* t. 24.
Fitz. Syst. Rept. 29 (1843).
Testudo Græca, *Pallas, Z. R. A.* iii. 17.

Hab. Border of Caspian Sea; Morea; Isle of Crete; Sicily; Algiers; Spain.

c. Adult (stuffed); 6¼ inches. South Europe.

d. Adult (stuffed). Shell and sternum pale, worn. Sicily. Presented by Dr. J. E. Gray.

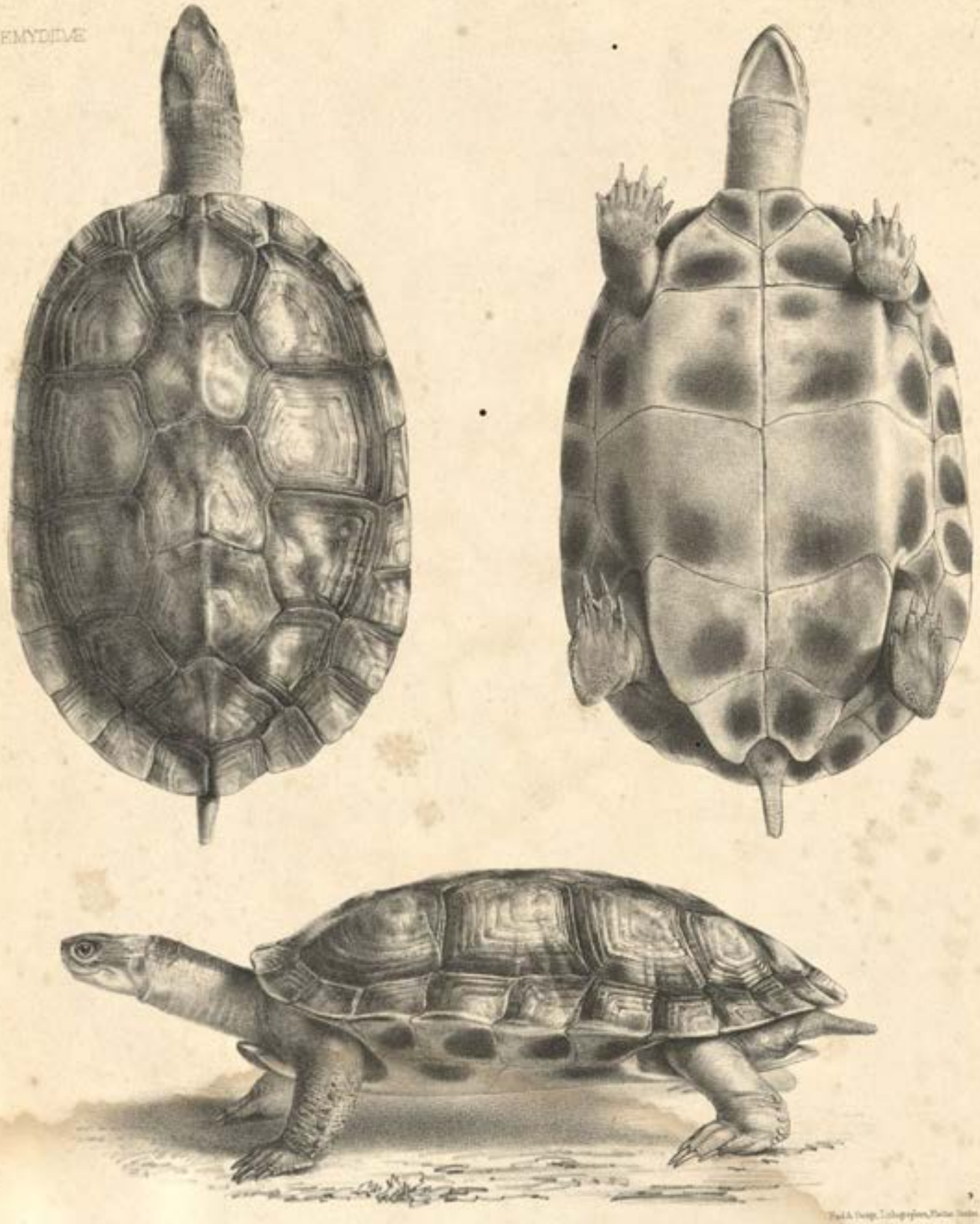
g. Adult (stuffed). Shell all black; edge of nuchal shield elongate. From the Zoological Society's Gardens.

h, *i*. Young (in spirits). Back with three interrupted keels, formed by a dark-edged, pale, oblong tubercle on the centre of the areola of the costal shields; sternum black, pale-edged; beak, temple and neck white-lined, with a round white spot over the middle of the tympanum. North Africa. Mr. Fraser's Collection.

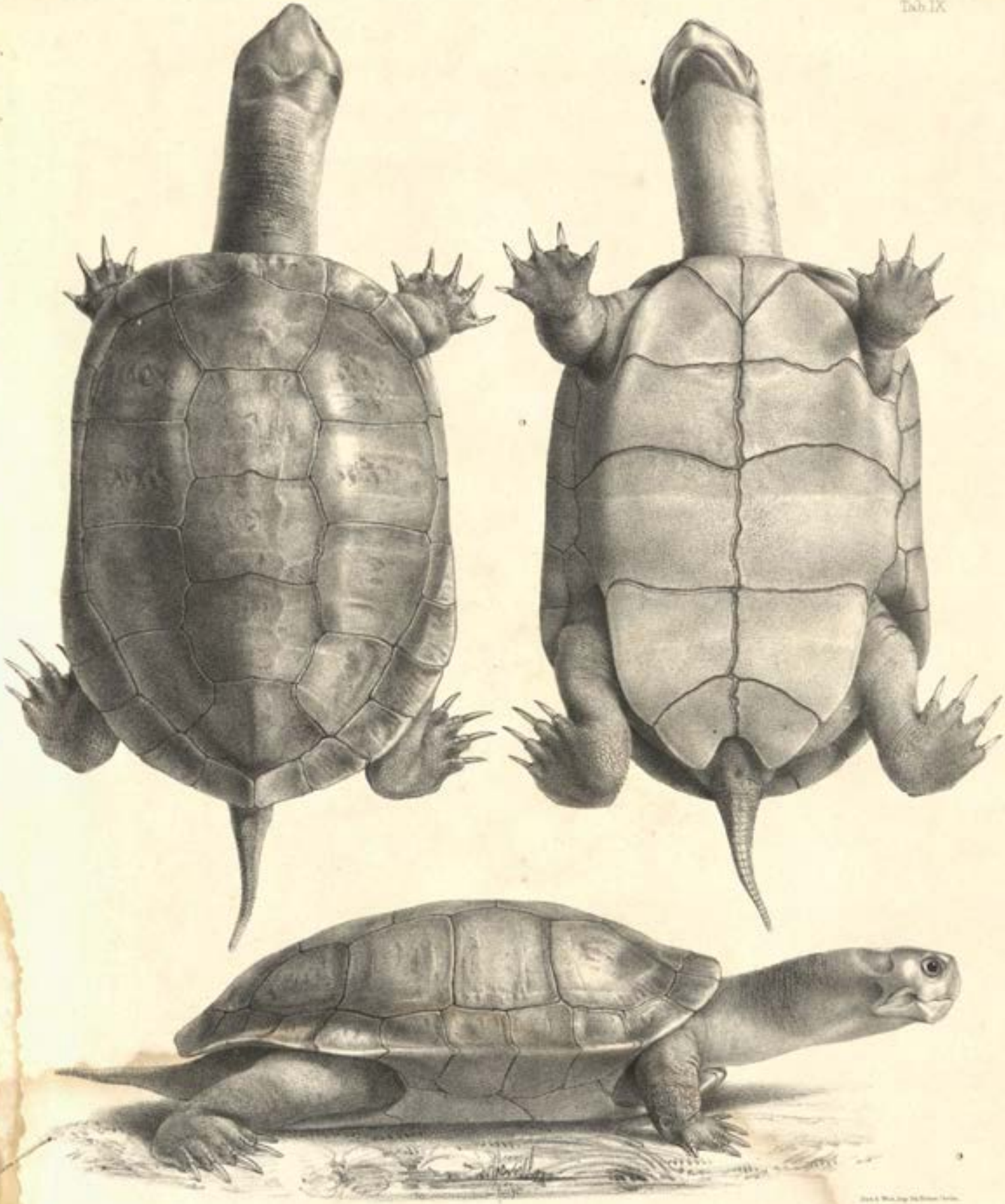
j. Young (in spirits), like *h*. Algiers. Presented by John Doubleday, Esq.

k. Young (in spirits). Asia Minor. Presented by A. Christie, Esq.

Emys Pannonica, *Michahelles.*



EMYS BENNETTII



EMYS LATICEPS n.s. (Gunkra)

l. Young (in spirits). Upper margin with a large pale ring, and lower with two black spots on each ring. Banks of the Euphrates.

m. Young (in spirits). Marginal plates with a subcentral black-edged pale band above, and a large square sutural spot beneath, sometimes separated into a twin spot divided at the suture. Xanthus. Presented by Sir Charles Fellows.

Osteology:—

a. Adult shell; 4¼ inches. Shell and sternum pale, worn. Europe. Presented by Thomas Bell, Esq.

e, f. Adult skeletons and shell. Claws all elongate; sternum black. Mr. Alexander's Collection.

b. Young shell, with three nodulose keels; sternum black; 2¼ inches. South Europe. Presented by Dr. J. E. Gray.

Griffith, A. K. t. . f. .

The sternum becomes pale and worn when the animal is kept in confinement. The front of the fore legs with several series of broad lunate scales on the inner side, and two series of large ovate elongate convex scales on the outer edge. Skull depressed, broad; forehead flat; nose truncated; cheeks nearly perpendicular; orbits nearly entirely lateral; lower jaw narrow.

There is perhaps more than one species combined under this name, or the pattern of the marks on the young is subject to considerable variation, which can only be decided by the study of more specimens than we at present possess.

Mr. Bell observes that the *Testudo Europæa* is a species of *Terrapene*; if so, the name of it should be changed, as it is certainly the *Emys* of the ancients.—*Gray, Ann. Phil.* 1825.

††† *African.*

10. Emys laticeps. The Gambian Terrapen. Tab. IX.

Shell pale olive, yellowish beneath; sides rounded; hinder lateral margin rather expanded and recurved; hinder end rather compressed above; plates thin, transparent, inferior plates with a narrow black edge. Head large, short, broad, covered with a smooth skin; fore legs and neck with very narrow yellow lines when alive.

Emys laticeps, *Gray, Proc. Zool. Soc.* 1853; *Ann. & Mag. Nat. Hist.* 1855, xv. 68.

Hab. West Africa; Gambia.

a, b, c, d, e. Adult. West Africa. Mr. Castany's Collection.

Eyes sublateral, near end of nose. Feet broadly webbed. The front of the large legs with two series of broad square scales on the inner, and two or three series of larger, more oblong scales on the outer edge.

Somewhat like *E. olivacea*, but the shell is more convex; and the vertebræ, as seen through the plates, are considerably wider.

What is *Emys Bonensis, Schlegel, in Müller, Verhand.*?

11. Emys oculifera. The Eyed Emys.

Shell (very young) hemispherical, strongly toothed behind; shields elevated, furrowed, granulated, grooved, each two connected longitudinally by a largish round black spot, and horizontally by a largish black circle, consequently each displaying two half-eyes, and anteriorly and posteriorly two half-spots; margin with a spot on each suture, the points of which correspond with the spot on the costal shield; sternum yellow, with dark brown spots and streaks.

Emys oculifera, *Gray, Syn.* 22; *Cat. Tort. B.M.* 28. Testudo oculifera, *Kuhl, Beitr.* 77.

Hab. South Africa; Cape of Good Hope? Mus. Berlin.

†††† *North American.*

Several of the American *Terrapenes* have the claws of the front feet much elongated, especially the three central ones; but this does not appear to be a permanent character; for it is found in some specimens, and not in others of the same species.

It may be observed, that the North American species of this genus require to be revised and accurately compared, as their present descriptions and the figures which have hitherto been published of them are often very unsatisfactory.

* *The dorsal shields variegated or ringed; the marginal shields with two half rings, the centre being on the suture.*

§ *The dorsal (vertebral and costal) shields with a single concentric set of rings or spots on each.*

§§ *The costal shield with a subcentral, transverse, pale streak, surrounded with irregular dark lines.*

§§§ *The costal shield with a single, subcentral, forked, pale, transverse, irregular streak.*

** *The dorsal shields variegated or ringed; the marginal shield with a single spot or ring, with the centre on its hinder edge.*

*** *Back uniform.*

* *The dorsal shields variegated or ringed; the marginal shields with two half rings, the centre of the ring being on the suture.*

The system of colouring is most distinct in the young shell; and as the animal grows, the position of the centres of the concentric rings or spots is considerably altered; thus the spot which is central in the very young animal becomes more and more lateral as regards the shield it is under, as the animal increases in size. To define a species properly, it should be examined, compared, and described in all its stages of growth, which has as yet been the case with very few of the American *Emydes*.

There are sometimes one and sometimes two centres of the spots or concentric rings under each of the dorsal shields; but, in general, the centres of the spots in the margin are placed on or near the suture between two marginal shields, so that a part of the same spots or set of rings is on two neighbouring shields.

The colouring matter which forms the spots or variegations on the shell, is situated in the skin under the shields. The marks are much more defined and regular in the young animal, and more distinct in the skin when the shields are removed, than when seen through the thicker shields of the older animal. The colouring matter appears to be much influenced by the health of the animal; for specimens which are well marked often become less marked and almost uniformly coloured in confinement, rendering the distinction of specimens of shells which have died in confinement very difficult; and in many cases the sternal shields themselves become thinner, and at length carious, which at once shows that the shell is in a diseased state, and should not be considered in its normal state of colouring.

§ *The dorsal (vertebral and costal) shields with a single spot or concentric series of rings on each. Sternum yellow, with a large, irregular, but defined dark blotch on the central line.*

12. Emys ornata. The Beautiful Emys. Tab. XII.

Shell oblong, longitudinally rugose, olive; vertebral shields irregularly ringed; first four-sided, second and third rather long, six-sided; costal shields with black-edged pale rings round a brown spot rather below the centre; marginal shield with concentric pale rings round a posterior sutural spot; beneath yellow, with round ringed spots on the suture of the marginal plates, and with a dark-edged, irregular, greenish line down the centre of the sternum, and a double one the whole length of the sterno-costal symphysis. Head, neck and beak with broad and narrow yellow streaks.

Emys ornata, *Bell, MSS.*
Gray, Syn. 30; *Cat. Tort. B.M.* 22; *Beechey, Voy. t. Dum. & Bib. Erp. Gén.* ii. 286 (not *Synon.*).

Hab. N.W. coast of America; New Orleans, Mexico, Tampico, Yucatan.

a. Half-grown (stuffed). Tropical America.

j. Adult (stuffed). America. From the Zoological Society's Gardens. Tab. XII.

l. Adult (stuffed). Costal shields longitudinally furrowed; dark-coloured rings indistinct. Mexico.

m. Adult (stuffed). America. From the Zoological Society.

k. Half-grown (stuffed). The nuchal streak on one side interrupted. Mexico.

i. Half-grown animal (dry). Plates radiately striated. West Indies? Mr. Scrivener's Collection.

h. Young (stuffed). Plates radiately striated. Mexico?

d & *e.* Very young (in spirits). Areola of vertebral plates with a posterior central spot and lateral streak; costal with a central spot rather below the centre, surrounded with three or four regular rings; marginal plates with a spot on hinder margin, and rings in front of it. Head yellow-lined, with two broader lines on side of head. Mazatlan. Presented by Alexander Collie, Esq., R.N.

f. Very young (in spirits). Exactly like *d* and *e*. "New Orleans." (?) From Mus. Paris.

"Emys concinna, *Duméril*." Mus. Paris.

g. Very young (in spirits). Mexico.

c & *n.* Very young (dry). Mexico.

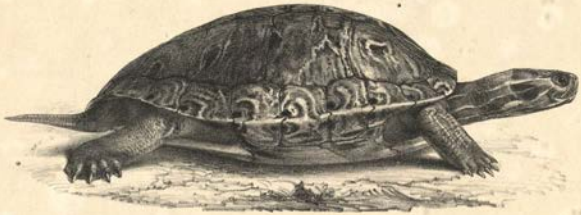
Osteology:—

b. Adult (shell only). Tropical America. Presented by Dr. J. E. Gray.

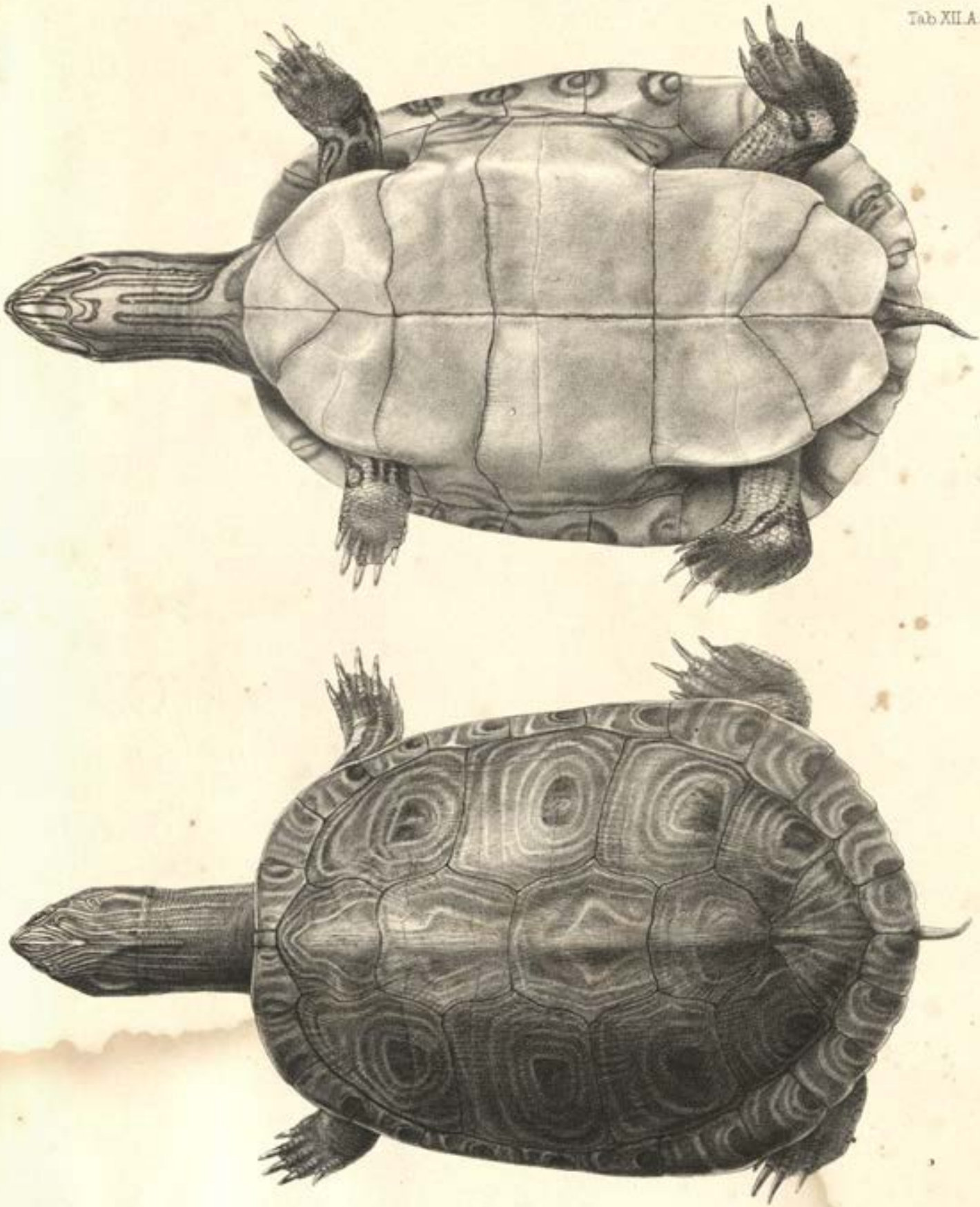
13. Emys venusta. The Charming Emys. Tab. XII. *a.*

Shell oblong, longitudinally subrugose, olive; vertebral plates with irregular-shaped, concentric, pale rings, the costal with more regular, concentric, pale rings round a brown spot, which is rather above the centre; marginal shield with concentric rings round a posterior sutural spot. Beneath yellow, with round dark spots on the suture of the marginal spots, and darker-edged, irregular, greenish lines on the central and other sutures of the plates, and a double line on the sterno-costal symphysis. Head, neck and beak with broad and narrow yellow streaks.

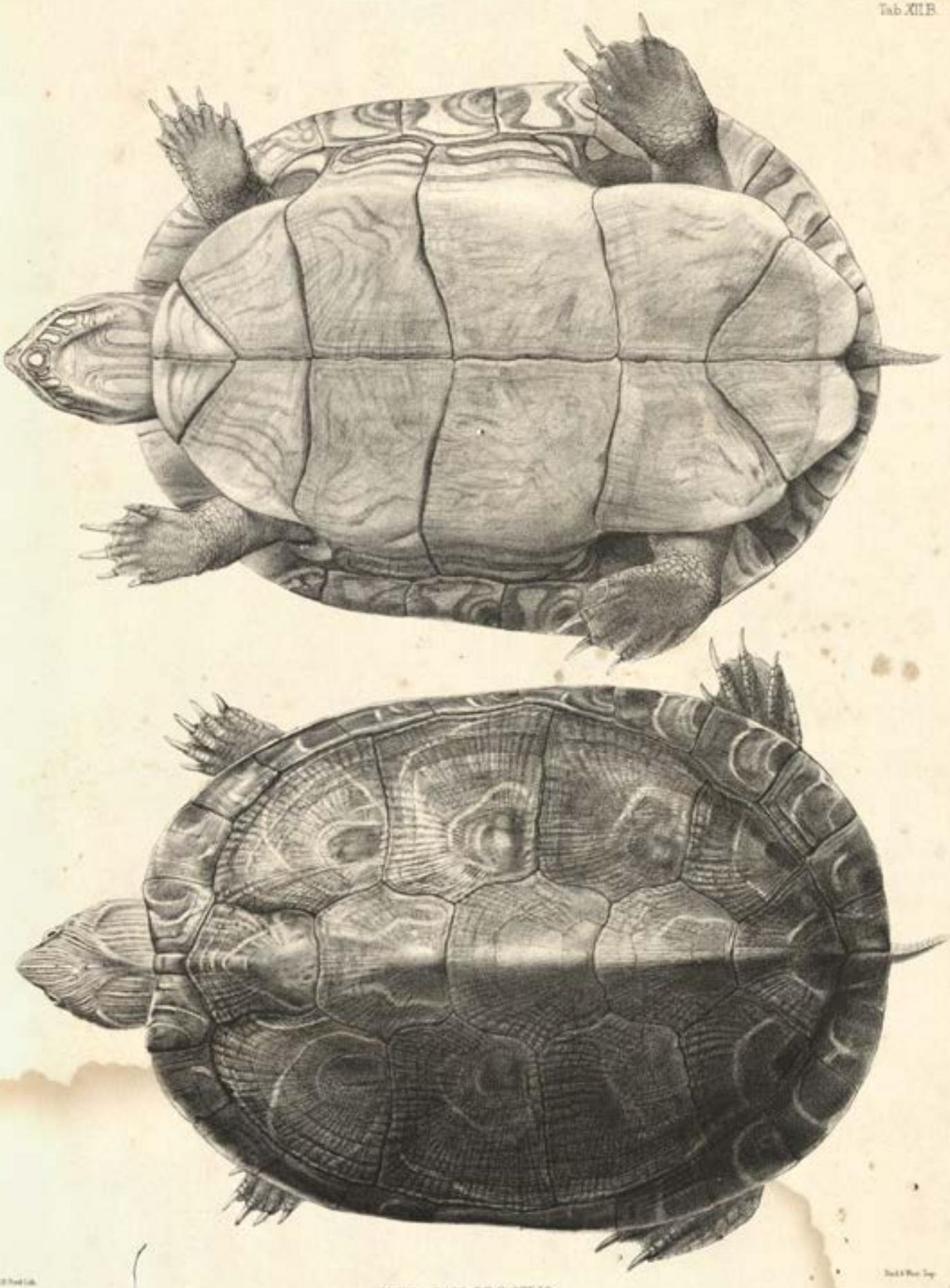
Hab. Southern States of America; Honduras (*Dyson*).



EMYS ORNATA. adult.

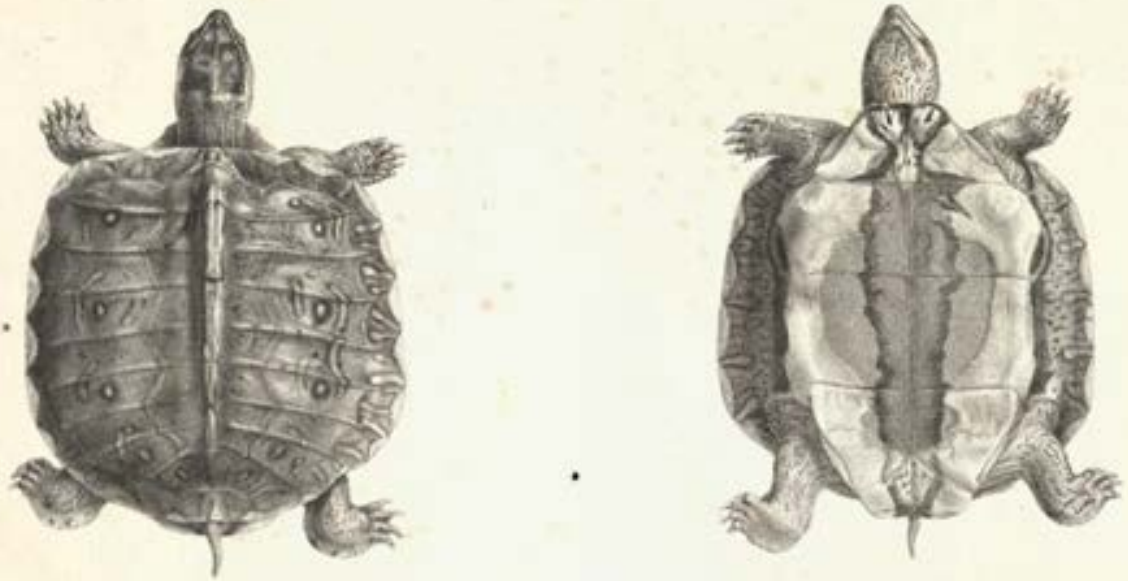


EMYS VENUSTA.



EMYS CALLOROSTRIS

1



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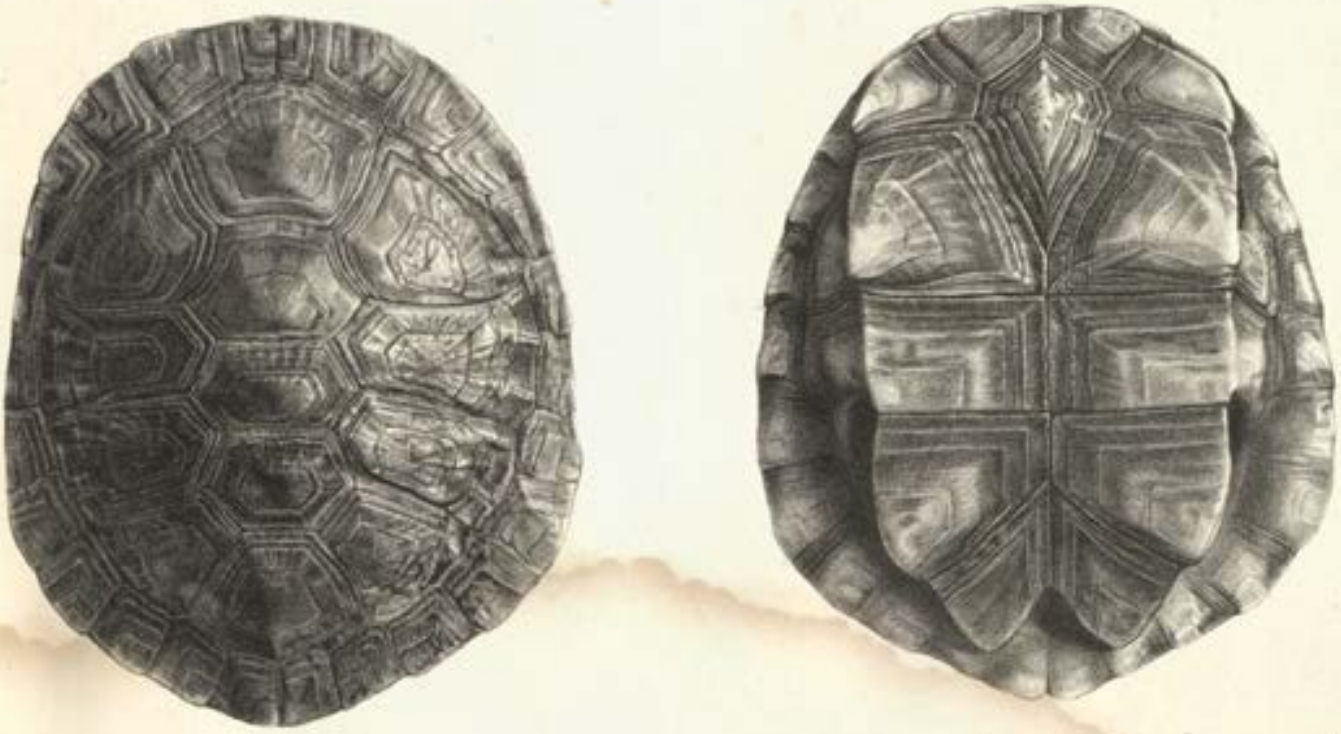
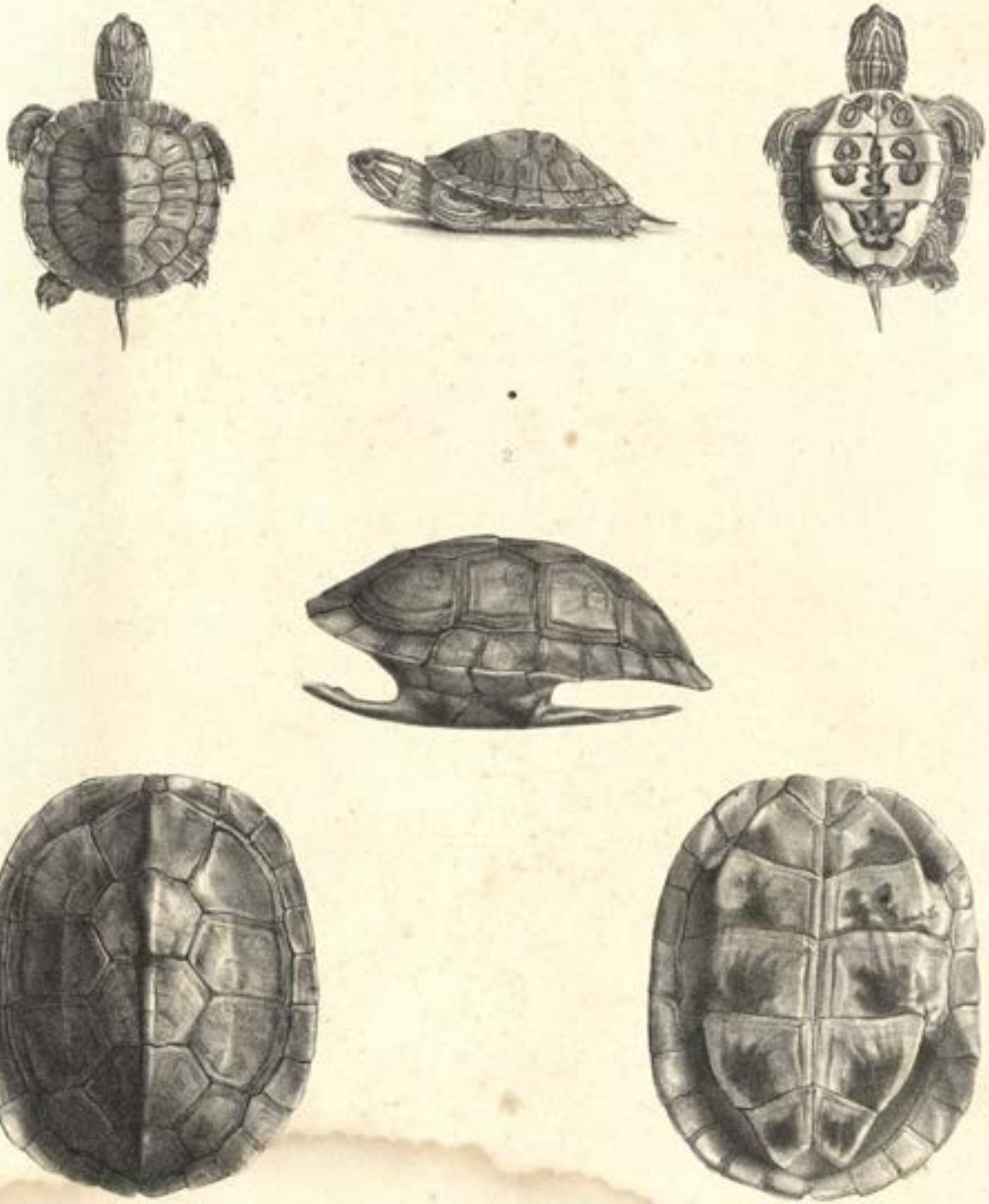


1 EMYS PULCHERRIMUS 2 CHELODINA SULCIFERA



1 EMYS SANGUINOLENTA 2 EMYS MUTICA

a. Adult (stuffed). Shields smooth, polished; dark rings well marked. America.

f. Adult (stuffed). Shields smoothish; sternal bands indistinct. Honduras. Mr. Dyson's Collection.

g. Adult (stuffed). Shields radiately striated and concentrically grooved; sternal bands indistinct. North America. Gardens of the Zoological Society.

h. Adult (stuffed). Back very dark blackish-brown; shields rugose; rings and sternal bands indistinct from melanism. Mexico. Mr. Warwick's Collection.

e. Half-grown. Shields smooth; rings concentric, regular; sternal bands obliterated. Honduras. Mr. Dyson's Collection.

Osteology:—

b. Adult (shell only). Shields rather smooth; dark spots very distinct.

c. Half-grown (shell only). Shields nearly smooth; sternal bands distinct.

d. Adult (shell only). Shields rather furrowed; sternal bands distinct.

This species chiefly differs from *E. ornata* in the rings on the shields being more regular, and in the dark spot of the nucleus of the shield being higher up in the costal shields. The sternal bands are generally more or less obliterated in the specimens which have been in confinement.

14. Emys callirostris. The Beautiful Braked Emys. Tab. XII. *b*.

Shell oblong, very similar in markings to *E. ornata* and *E. venusta*, but the pale rings are narrower, fewer, and in the anterior costal the outer one extends from the upper to the lower outer margin, and the pale rings on the marginal plates are narrower. The head and neck have crowded, narrow, yellow lines, forming symmetrical rings on the throat. Sternum yellow, nearly covered with dark-edged, concentric, irregular bands. Beak with beautiful symmetrical spots, surrounded with concentric black lines.

Hab. America.

a. Half-grown (stuffed). America. Presented by the Haslar Hospital.

15. Emys pulcherrimus. The Dotted Emys. Tab. XXV. fig. 12.

Shell (very young) oblong, broad, rather convex, convexly keeled, smooth; pale brown (when dry), with a round, pale-eyed, dark, subcentral spot, and a curved, dark-edged, pale band below, and a more indistinct one above the spot on each of the costal plates. Vertebral shield broad, six-sided. Sternum yellow, with a broad, irregular-edged, black, central, longitudinal band, varied with yellow in front, and with a broad black streak on each side near the end of the sternal plates; margins black-dotted beneath, with a large black ring on the middle of each plate. Head brown above, with three narrow pale streaks, one on the centre, and the others over each orbit; the upper part of the neck with seven longitudinal streaks, edged with a series of minute black dots; sides of neck, throat and feet minutely black-dotted, forming tortuous pale lines on the front of the legs.

Hab. Mexico.

a. Stuffed. Young shields very thin, smooth, nearly transparent. Mexico.

§§ *The costal shield with a subcentral, transverse, pale streak, with more or less irregular, parallel, dark oblong rings on each side. Sternum spotted.*

The front dark lines in the first or anterior costal sometimes unite, forming spots, which are symmetrical on the two sides of the animal; the first, second and third vertebral shields have an arched pale band, with parallel darker streaks; and the fourth and fifth vertebral have an arched longitudinal band on each side, with parallel or concentric darker bands on each side of it. These bands are only to be distinctly observed in young well-marked specimens.

16. Emys Holbrookii. Holbrook's Emys. Tab. XV. fig. 1.

Shell oblong, rather convex, scarcely keeled, longitudinally rugose, pale, each shield with two oblong concentric rings, those of the vertebral plates longitudinal, of all the costal transverse; marginal plates each occupied with two semiovate spots, formed of concentric rings. Sternum yellow, with a large black spot on each shield, and with two large oblong spots of irregular concentric rings along each sterno-costal suture; nuchal plate elongate; first vertebral square, rather longer than broad, others wide, six-sided. The head, beak, neck and feet yellow-lined; temple with a large, broad, oblong streak from the back of the orbit along the sides of the neck.

Emys Holbrookii, *Gray, Cat. Tort. B.M.* 23.
Emys Cumberlandensis, *Holbrook, N. A. Herpet.* ed. 2. i. 115. t. 18.
Dum. Cat. Rept. M. H. N. 13 (1851).

Hab. North America; Cumberland River; Louisiana.

b. Adult (stuffed). Sternal spots large, diffused. North America. M. Parzudaki's Collection.

h. Adult (stuffed). Sternum black-spotted. Louisiana. Mr. W. Smith's Collection.

g. Half-grown (in spirits). Sternal spots large, solid, diffused, the hinder subconfluent. North America. Mr. Brandt's Collection.

E. serrata, *Brandt.*

c. Half-grown (in spirits). Three middle front claws elongate; sternal spots round, solid; band on the symphysis solid, black, interrupted in front. North America, Ohio. From the Leyden Museum.

E. serrata, *Mus. Leyden.*

d. Half-grown (stuffed). Spots on sternum solid, distinct, very like "*c.*" North America, Louisiana. Mr. Smith's Collection.

e. Young (in spirits). Sternal spots annular, distinct only where the plate is deficient. New Orleans.

f. Very young (in spirits). Sternal spots annular, brown, with a double marginal dark ring on the edge of the gular and the middle of the other plates.

Emys sanguinolenta, *Gray, MSS.* Tab. XV. fig. 1.
? Emys Kuhlii, *Gray, Syn. Test.* 73; *Cat. Tort. B.M.* 28.

Osteology:—

a. Half-grown shell. Sternal spots subannular. North America, Louisiana. From Mr. J. Drummond's Collection.

Emys Holbrookii, *Gray, Cat. Tort. B.M.* 23.

This species is very like *E. scripta*, but there is a distinct pale streak on the fourth or hinder costal shield, as well as on the others, while in *E. scripta* there is only a single dark spot on the hinder margin of that plate, surrounded with a single series of arched, dark, concentric lines; the form of the streaks on the neck and the extension of the dark marks on the sterno-costal symphysis are also permanent distinctions.

17. Emys scripta. The Lettered Emys.

Shell oblong, longitudinally rugose, keeled, toothed behind, brown, irregularly yellow-ringed, and with irregular yellow streaks on the sides, forming two oblong rings on the first, second, third and fourth costal plate, and concentric rings round a posterior dark spot on the front costal shield; nuchal shield linear, porrect; vertebral shields bluntly keeled, first urceolate, fourth and fifth six-sided; under margin with a black spot on the back edge of each plate. Sternum yellowish, black-spotted, with a spot on each end of the sterno-costal symphysis. Head, beak, neck and feet yellow-lined, the central frontal line distinct; the temple with a large pale spot.

Emys scripta, *Merrem, Tent.* 24.
Gray, Syn. 29; *Cat. Tort. B.M.* 23.
Testudo scripta, *Schoepff. Test.* 16. t. 3. f. 4, 5.
Shaw, Zool. t. 12.
Daud. Rept. ii. 140.
Emys scripta, *Schweigger, Prod.* 297.
Merrem, Tent. 24.
T. serrata, *Daud. Rept.* ii. 148. t. 21. f. 1, 2.
Schoepff. Test. t. 3. f. 5.
Leconte, Ann. Lyc. N. Y. iii. 105.
Emys serrata, *Schweigger, Prod.* 301.
Merrem, Tent. 26.
Leconte, Ann. Lyc. N. Y. iii. 105.
Dum. & Bib. Erp. Gén. ii. 267; *Cat. Méth. R.* 10.
Holbrook, N. A. Herpet. i. 49. t. 5; i. 31. t. 5.
Testudo rugosa, var., *Shaw, Zool.* iii. 29.
Terrapene scripta, *Bonap. Obs. Règ. Anim.* 155 (1830).

Hab. North America; New York. Near the coast from Virginia to Georgia. Sold in the markets of Charleston as the "yellow-bellied Terrapen: flesh good."—*Holbrook.*

A large species; shell often 12 or 14 inches long.

Var. 1. Temple with a large square yellow spot at the back of the orbit. Sternum pale, with a solid spot on each gular, axillary, inguinal and marginal shield.

E. scripta.

b. Young; 4 inches. Front claws short; sternal spot solid. North America. Presented by Major-General Thomas Hardwicke.

Var. 2. Temple with a large square spot at the back of the orbit. Sternum pale, with regular subcentral black rings on each sternal plate.

c. Half-grown (stuffed). Three middle front claws elongate; sternum, lower margin with large black rings. North America.

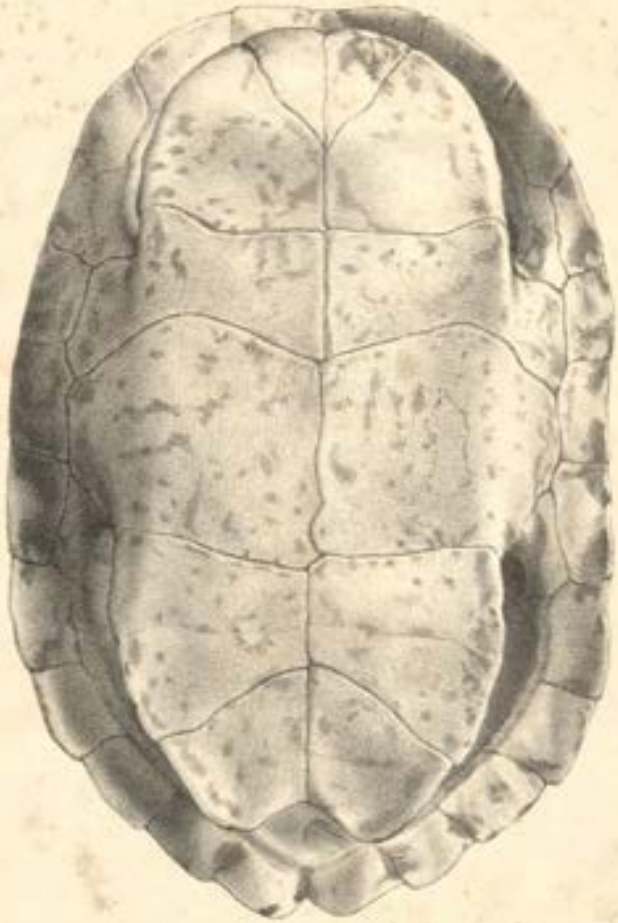
Var. 3. Temple with a large, broad, erect streak behind the eye, and a large triangular spot over the tympanum. Sternum pale, with a round solid spot on each gular, axillary, inguinal and marginal plate.

f. Young (in spirits). Green. North America. Presented by the Zoological Society.

Var. 4. Temple with a large, broad, oblong streak from the back of the orbit along side of neck. Sternum with a large solid spot on most of the sternal and on each marginal, axillary and inguinal plate.

a. Adult (stuffed). Three middle front claws moderate, broken; sternum with a solid black spot on each gular, axillary, inguinal and marginal plate, and on one or two of the other sternal plates.

Var. 5. Head and neck streaks very indistinct. Sternum black speckled, with a large irregular spot on each



EMYS RIVULATA

shield, three on each abdominal plate (when the horny shields are removed, only concentric rings are seen).

a. Adult animal and shell (in spirits). North America; Cumberland River. From the Leyden Museum. "E. Troostii," *Mus. Leyden.*

The indistinctness of the streak on this animal and marks on the shell may arise from the muddiness of the river, for the specimen was covered in several places with a coat of mud. The peculiar disposition of the colouring is to be seen when the shields of the back are removed from the skin. It may not be *E. Troostii* of Holbrook, which is said to be a very depressed species. See No. 23.

18. Emys Floridana. The FLORIDA EMYS.

Shell oval, gibbous, longitudinally rugose, slightly carinated and entire behind, dark brown, with irregular yellow lines; nuchal shield triangular, beneath yellow, with a half black spot on each edge of the marginal plate above and below; jaws toothless; first vertebral urceolate, second and third hexagonal; plates olive, with several irregular black streaks, longitudinal on the vertebral and transverse on the costal plates. Sternum yellow. Head and neck dark olive, with two pale streaks for each eye, and two on each side of the neck below, the upper one with a branch to the eyes, the inferior pair united together in front of the throat with a single streak to the chin.

Emys Floridana, *Dum. & Bib. Erp. Gén.* ii. 285; *Cat. Méth. R.* 12.
Holbrook, N. A. Herpet. ii. 47. t. 8; ed. 2. i. 65. t. 8.
Gray, Cat. Tort. B.M. 26.
Testudo Floridana, *Leconte, Ann. Lyc. N. Y.* ii. 100.
Terrapene floridana, *Bonap. Obs. Cuv. R. A.* 134.

Hab. North America; East Florida; St. John's River.

A large species, with the shell often 15 or 16 inches in length; it seems to take the place of *E. scripta* in Florida.

19. Emys annulifera. The RINGED TERRAPEN.

Shell (very young) oblong, with three series of oblong irregular rings on the vertebral plate; a broad subcentral and some narrower pale lines on each costal plate, as in *E. scripta* and *E. maculata*. Sternum pale, with some oblong brown spots on the suture of the shield, and a round spot on the centre of each pectoral shield. Head pale-lined, as in *E. scripta*, but without the broad spot or nuchal band of that species.

Emys annulifera, *Gray, Syn. Rept.* 32; *Cat. Tort. B.M.* 28.
Hab. ——?

a. Very young (in spirits).

§§§ Three spots or sets of rings on each of the costal plates? leaving a forked pale cross streak.

20. Emys rivulata. The VARIED EMYS. TAB. XI.

Shell oblong, brown, varied with yellow, with a broad central depression; sides longitudinally rugose, hinder edge rather expanded, simply serrated; nuchal plate elongate; first vertebral plate urceolate; second and third elongate, six-sided, the costal plates with a subcentral, forked or branched, horizontal, yellow band; under side white, varied with irregular dusky clouds, forming obscure rings on the marginal plates.

Emys rivulata, *Gray, Cat. Tort. B.M.* 22.
Hab. North America.

a. Shell only; 9½ inches long. North America?

I describe this species with doubt, as I have only seen a single shell in its adult state without the animal.

The second and third costal plates with an indistinct areola in the higher part of the hinder edge, with two diverging streaks to the outer margin. The marginal plates divided by a broad central pale streak, sometimes with an obscure indication of a pale lunule.

Species with autural marginal spot, requiring further examination.

21. Emys reticularia. The CHICKEN TORTOISE.

Shell ovate, gibbous, not keeled, entire, longitudinally rugose, dusky brown; costal shield with an equal subsuperior ring, giving out diverging, sometimes anastomosing pale lines; marginal plate with a central transverse pale streak. Sternum yellow, with a spot on the symphysis and on some of the sides of the margin. Head and neck dark brown, with narrow yellow lines; throat dusky yellow, with three yellow streaks; a streak from the nostril extended on the side of the neck.

Testudo reticularia, *Latr. Rept.* i. 124.
Emys reticularia, *Merrem, Tent.* 29.
Gray, Syn. 27; *Cat. Tort. B.M.* 25.

Testudo reticulata, *Bosc.*
Daud. Rept. ii. 144. t. 22. f. 3.
Leconte, Ann. Lyc. N. Y. iii. 103.
Emys reticulata, *Schweig. Prod.* 50.
Merrem, Tent. 26.
Say, Journ. Acad. Philad. iv. 204, 109?
Dum. & Bib. Erp. Gén. ii. 291; *Cat. Méth. R.* 12.
Holbrook, N. A. Herpet. ii. 41; ed. 2. i. 59. t. 7.
Terrapene reticulata, *Bonap. Obs. Cuv. R. A.* 155 (1830).

Hab. North America, on the coast between North Carolina and Georgia. The flesh is much esteemed.

The shell is about 9 or 10 inches long.

22. **Emys Mobilensis.** The MOBILE TERRAPEN.

"Shell oval, ecarinate, convex anteriorly, depressed posteriorly, entire in front, emarginate and subserrate behind; jaws serrated, inferior furnished with a hook." Length 15 inches.

Emys Mobilensis, *Holbrook, N. A. Herpet.* ed. 2. i. 71. t. 9.

Hab. North America (Alabama). Greatly esteemed at Mobile as an article of food.

The figures greatly resemble my *E. ventricosa*, but the margin is represented as having sutural spots, which is not the case with that animal. See No. 25.

23. **Emys Troostii.** DR. TROOST'S TERRAPEN.

"Shell subrotund, much depressed, ecarinate; posterior part of the margin very slightly serrated; lateral and marginal plates marked with blotches or lines of horn-colour. Sternum broad, dirty yellow, each plate with a large blotch near its centre. Head long, narrow; upper jaw emarginate, lower jaw furnished with a tooth."

Emys Troostii, *Holbrook, N. A. Herpet.* i. 123. t. 20.

Hab. N. America (Cumberland River).

Length of shell 8 inches.

I have received an indistinctly marked specimen (evidently from its having lived in a muddy river) of *E. scripta*, from the Leyden Museum, under the above name, and it is said to come from the Cumberland River! The mark on the shell was only to be seen when the horny plates were removed.

Can this be the shell intended in the above description?

24. **Emys labyrinthica.** The NETTED TERRAPEN.

Shell oval, regular; hinder edge rather sinuous and elevated; central line swollen, not keeled, rugose, green, more or less brown, with a great number of sinuous and twisted yellow lines. Sternum entire in front, nicked behind, yellow. Head rather large; head and neck yellow streaked; lower jaw toothed.

Emys labyrinthica, *"Lesueur, MSS.," Dum. Cat. Rept. Mus. H. N.* 13 (1851).

Hab. North America (Wabash River).

What is Emys elegans, *Wied, Voy. Amér. Septent.* iii. 255, from North America?

** *Dorsal shields variegated or ringed; the marginal shield with a single spot or ring, with the centre on its hinder margin. The costal shields with a single pale ring, surrounding the dark areola, giving out pale streaks from its circumference, diverging (sometimes anastomosing or crossing each other) towards the margin of the plates.*

§ *The areola and ring on the hinder upper angle of the first or front, and the front* (?) *upper angle of the other costal plates; vertebral plates* ——?

25. **Emys ventricosa.** The SWOLLEN TERRAPEN.

TAB. XIV.

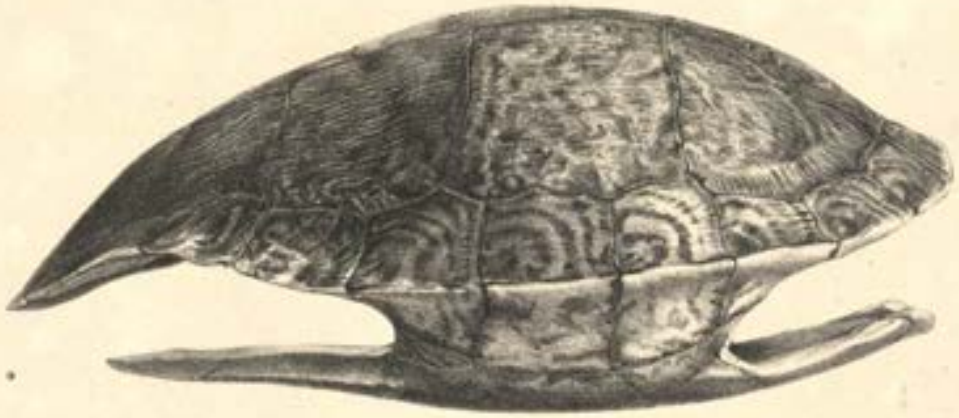
Animal ——? Shell convex, ventricose, swollen on the sides of the back, slightly keeled in front, and more sharply so behind; margin toothed behind; the hinder lateral margin bent up over the legs. Back rugose, blackish-brown, with some indistinct dark-edged yellow lines diverging from a squarish ring in the upper angle of the costal shields; upper side of the marginal plates with some dark rings concentrically round the hinder outer margin. The first vertebra urceolate, about as broad as long; the second, third and fourth elongate, six-sided. Sternum convex, pale yellow, with a narrow dark edge to the plates.

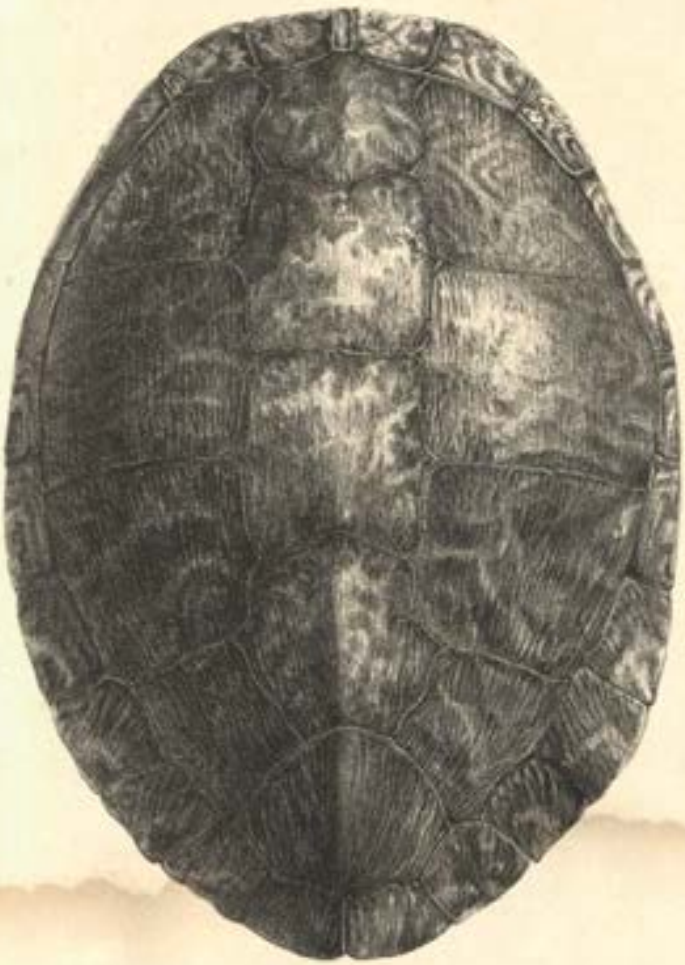
? Emys Mobilensis, *Holbrook, N. Amer. Herpet.* i. 71. t. 9; ii. 53. t. 9?
Gray, Cat. Tort. B. M. 25?
Dum. Cat. Méth. R. 11?

Hab. ——?

a. Adult (shell only).

The sternum may in the perfect specimen be more distinctly marked, as this example had evidently died in confinement, as proved by the carious state of the centre of the sternum. The colour is very much suffused in the hinder part, almost hiding the pattern of the paler marks, and the central dorsal shields are rubbed and worn, hiding the pattern in that part of the shell. The swollen form,





EMYS VENTRICOSA

the obscure rounded keel on the first, and the sharp keel on the two hinder vertebral keels, are very peculiar, and the manner in which the rings are marked on the marginal plates is unlike any of the other American *Emydes* I have seen, except *E. pseudogeographica* and *geographica*.

The figure of *Emys Mobilensis* (*Holbrook, N. A. Herpet.* i. t. 9) somewhat represents this species, as far as regards the distribution of the colours of the costal shields (they are more definite than in our specimen), but the pattern on the upper and under sides of the marginal shield is entirely unlike, as the rings or spots are represented as being on the suture, half the spots being on each shield, as in the more common form of American *Emydes*. But in this respect, Dr. Holbrook's artist is not to be depended on, as he represents *Emys geographica* distinctly, and *pseudogeographica* indistinctly, as having the rings of the same form, which authentic specimens show to be an error.

Dr. Holbrook represents the head, neck, throat and feet of *Emys Mobilensis* as having broad yellow lines, the two central throat lines being united near the chin.

§§ *The dark areola and ring are in the upper hinder margin of the first, and gradually lower in the second and third, so as to be in the lower hinder margin of the fourth or last costal shield, and on the hinder margin of all the vertebral plates.*

There is generally a smaller dark spot in the centre of the other rings, formed by the netted lines, as on the front lower edge of the first and second costal, and on the sides of the vertebral plates.

26. Emys geographica. The GEOGRAPHIC EMYS.

Shell ovate, convex, smooth, tubercularly keeled in front and slightly toothed behind, olive-brown, with black-edged anastomosing pale lines; first and fifth vertebral plates broad, five-sided, rest broad, six-sided. Sternum yellow; shields blackish-edged; under side of the marginal plates olive, with rather concentric, black-edged, broad and narrow pale lines. Head and feet with numerous yellow lines, and a triangular yellow streak on each temple.

Emys geographica, *Lesueur, Journ. Acad. N. S. Philad.* i. 86. t. 5.
Leconte, Ann. Lyc. N. Y. iii. 108.
Gray, Cat. Tort. B.M. 21.
Dum. & Bib. Erp. Gén. ii. 256; *Cat. Méth. R.* 9.
Say, Journ. Acad. Philad. iv. 204, 215.
Harlan, Rept. 76.
Holbrook, N. A. Herpet. i. 99. t. 14.
DeKay, New York, 18. t. 4. f. 7.
E. Lesueurii, *Gray, Syn. Rept.* 31.
Terrapene geographica, *Bonap. Obs. Cuv. R. A.* 156 (1830).
Testudo geographica, *Leconte, Ann. Lyc. N. Y.* iii. 108.
Emys megacephala, *Holbrook, N. A. Herpet.* i. 51. t. 3.
Gray, Cat. Tort. B.M. 21.
E. geographica, *Dum. Cat. Méth. R.* 9.

Hab. North America; New York; Wabash River; Cumberland River; Tennessee (*Troost*).

a. Half-grown (animal dry, from spirits). Head small. North America.
Emys Lesueurii, *Gray, Syn. Rept.* 31.

The Museum specimen is in a bad state; it chiefly differs from *E. pseudogeographica* in the keel not being nodose, the vertebral plates very broad and short, and in the pale reticulations being finer.

It may be distinct from the *E. geographica* or *megacephala* of Holbrook (which is represented by the same figures); and perhaps it would have been better to retain for it the name under which I first described it.

Dr. Holbrook represents the head of *E. geographica* as large (that may be sexual), with numerous regular green lines, an oblong elongated spot on each side of the nape, and an eyed spot on each side of the throat, near the angle of the mouth.

27. Emys pseudogeographica. The SHARP-BACKED EMYS.

Shell elongate-ovate, nicked in front, toothed behind; vertebral keel tubercular, very distinct, netted with numerous yellow lines, with a ring surrounding a dark spot on the hinder edge of the costal and marginal shields, and three smaller spots on the vertebral plates. Sternum yellow, darker clouded, darkest in the young. Head small, oval, brown, with numerous yellow lines and a yellow spot on and across each temple.

Emys Lesueurii *β*, *Gray, Syn. Rept.* 31.
Emys, *Lesueur, Mém. Mus.* xv. 267 (1827).
Testudo geographica, var., *Lesueur, Ann. Lyc. N. H. N. Y.* iii. 110 (1836).
Emys pseudogeographica, *Lesueur, MSS.*
Holbrook, N. A. Herpet. i. 103. t. 15 (lines on marginal plates rugose).
DeKay, 29. t. 2. f. 3.
E. geographica, jun., *Dum. & Bib. Erp. Gén.* ii. 256.
Holbrook, N. A. Herpet. i. 103. t. 15 (1842).
E. geographica, var., *Gray, Cat. Tort. B.M.*

Hab. North America; Wabash River.

a. Adult (stuffed). Neck, temples and lips with broad, distinct yellow streaks. North America. Presented by Dr. J. E. Gray.
E. geographica *α*, *Gray, Cat. Tort. B.M.*

b. Adult (stuffed). Neck with many very narrow yellow lines; temple and frontal streaks narrow; lips dotted and lined. North America. *M*. Parzudaki's Collection.

E. geographica *β*, *Gray, Cat. Tort. B.M.*

c & *d*. Adult (stuffed). Frontal, temporal and labial streaks distinct, like "*a*." North America; Louisiana. Mr. W. Smith's Collection.

e. Adult (large size). Frontal, temporal and labial streaks narrow, with other parallel narrower lines, somewhat similar to "*c*." North America; Louisiana. Mr. W. Smith's Collection.

f & *g*. (Half-grown). Back very high, compressed and shelving, sharply keeled; frontal and temporal streaks distinct, moderate; labial narrow, interrupted. North America; Louisiana. Mr. W. Smith's Collection.

Head olive, with a more or less broad yellow streak on the centre of the crown, and a converging streak over each side of the occiput, arising from a broad angular spot on the temple at the back of the orbit. Neck yellow-streaked. There are generally some narrow yellow streaks on the crown and occiput, parallel or concentric with the principal lines above described, and a curved yellow line on the upper lip under the orbit, but in one specimen (*b*) the upper lip is varied with dots and minute yellow curved lines.

The figure of Dr. Holbrook does not represent the dark spots of the areola which are so distinct in the stuffed specimens, and the markings on the marginal plates are very inaccurate.

**** Shell and margin uniformly coloured. Sternum variegated.*

28. Emys olivacea. The Quaker Emys. Tab.

Shell depressed, broad, oblong; plates very thin, smooth, transparent; hinder part of the back bluntly keeled; vertebral plates broad, six-sided; margin revolute, raised and expanded over the hinder legs. Beneath ——? Sternum yellow, with dark-edged variegations on the central line, and sinuated, subconcentric, dark-edged bands on the front part. Head small, olive; forehead flat; nose very short; lower beak with several pale cross bands in front. Neck and legs yellowish olive; fore-legs with one or two broad pale streaks; three middle claws of fore feet very long, straight, subulate.

Hab. N. America?

a. Adult (stuffed). Obtained alive from a dealer at Nantes, who said it was from the South of Europe?

Tropical or South America.

† *Back uniform coloured; margins and sternum often variegated; submarginal rings sutural when present.*

29. Emys decussata. The Hicotee.

Shell oblong, bluntly keeled, hinder edge slightly toothed; dorsal shields rugulose, irregularly radiately grooved, uniform pale brown, beneath yellowish, with obscure subocellate spots on the axillary, inguinal, and on the suture of the marginal plates. Animal greenish; cheek and throat indistinctly pale lined; front of the fore legs with a series of broad transverse shields.

Emys decussata, *Bell, Test*. t. 1.
Gray, Syn. 24; *in Griffith, A. K*. v.; *Cat. Tort. B.M*. 24. *Dum. & Bib. Erp. Gen*. ii. 279; *Cat. Méth. R*. 11.
Sagra, Cuba Rept. t. 1.
Testudo serrata, *Daud. Rept*. (not figure).
Emys serrata, var., *Schweig.*
Schlegel, Faun. Japon. 58.

Hab. West Indies; Cuba; Guadaloupe; St. Domingo.

a. Half-grown (stuffed). Sternum in a bad state from confinement in a menagerie. West India Islands. Presented by Dr. J. E. Gray.

j. Adult (stuffed). Sternum discoloured. St. Domingo. From the Paris Collection.

k. ? Very young (in spirits). Uniform pale yellow. Tropical America.

l. ? Very young (dry). Uniform pale yellow. Tropical America.

Osteology. Skull, Tab. XXXVI. fig. 2.

b. Half-grown shell, from animal in confinement. America; West Indies.

c. Adult (skeleton). Sternum and lower side of marginal plates with dark rings. West Indies. Presented by Dr. J. E. Gray.

d. Adult (shell only). Sternum discoloured. West Indies?

e. Adult (shell only). Sternal and lower side of marginal shield with irregular rings; some indistinct large oblong sutural spots on the upper part of the marginal plates. West Indies.

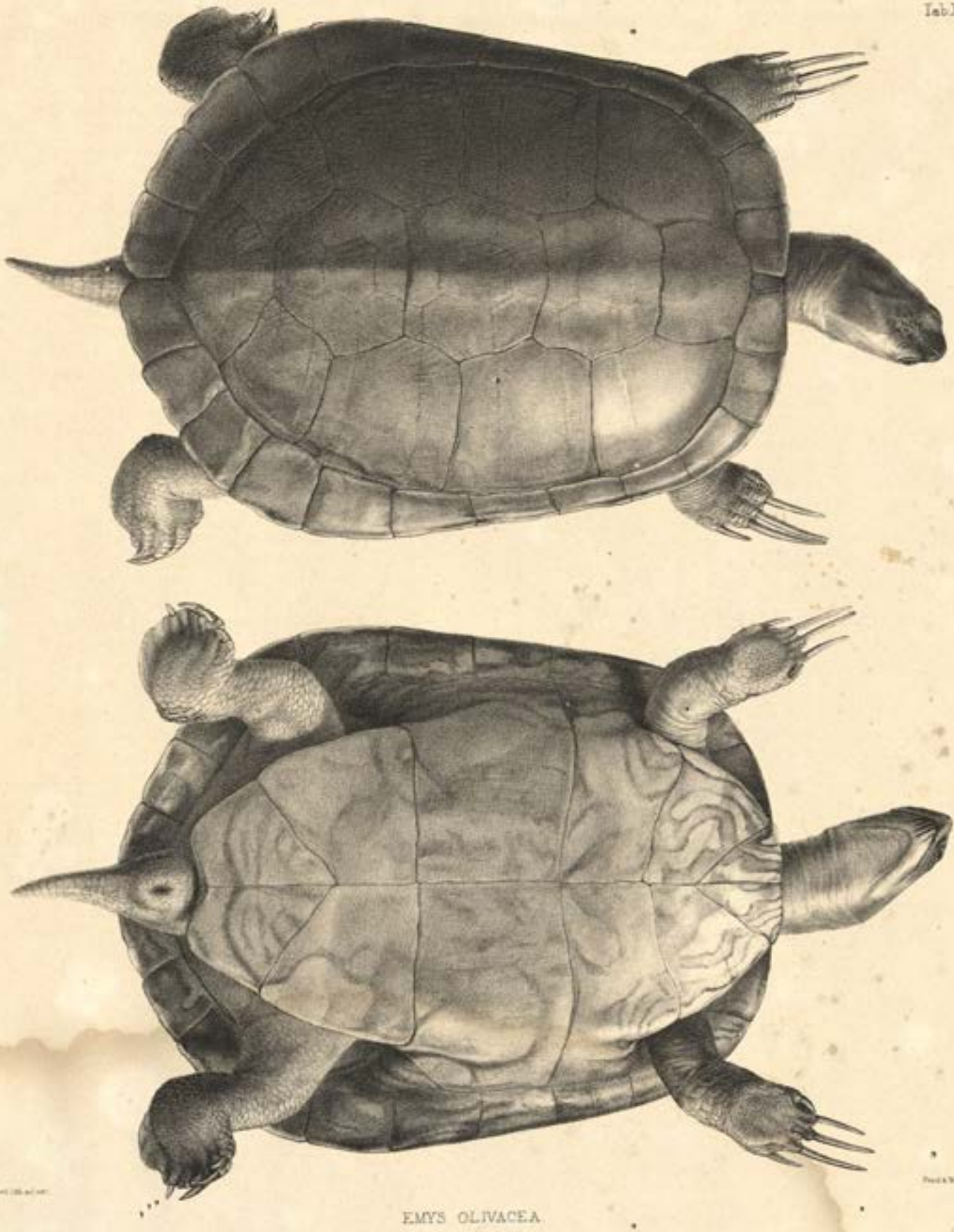
f. Half-grown shell. Sternum discoloured. West Indies.

g. Adult (shell only). Sternum discoloured and eroded. West Indies. From the Zoological Society's Gardens.

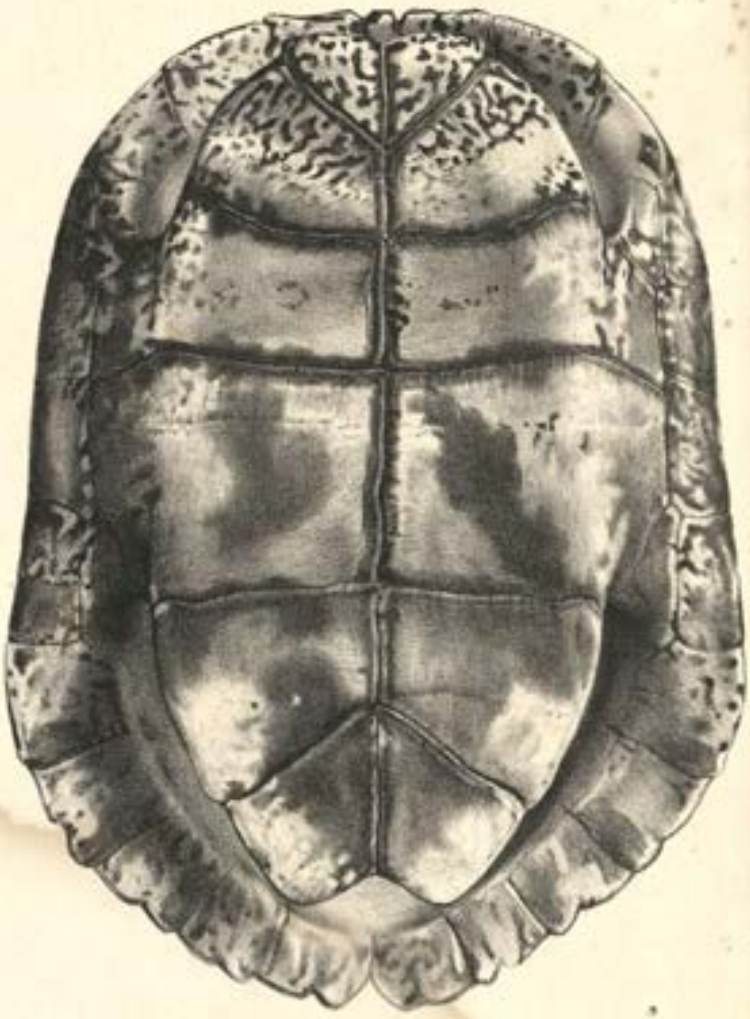
h. Half-grown (shell only). Back dark; sternum much eroded. West Indies. Presented by Thomas Bell, Esq.

Emys decussata, *Bell.*

i. Adult (skeleton). The upper part of the marginal shield with very indistinct, and lower part more distinct, square annulated sutural spots; sternum with distinct irregu-



EMYS OLIVACEA



EMYS VERMICULATA

lar-shaped symmetrical rings. St. Domingo. From the Paris Collection.

"Emys decussata ♀," *Mus. Paris.*

m. Adult (shell). Back dark brown; upper part of the margin with obscure, lower with very distinct oblong spots on the suture of the plates; sternum with irregular-shaped symmetrical rings and scattered black spots. West Indies. Presented by Dr. J. E. Gray.

The heads of both the skeletons are large, and the space between the branches of the lower jaw is wide and rounded in front, very unlike the small head and the narrower and more acute space between the branches of the lower jaw in *E. rugosa*.

The animal and shell are well figured from life by Mr. Bell. The head, neck and feet are blackish olive, the fore legs alone having some obscure indications of broad yellow streaks, but the animal may have been in confinement. The under surface of the marginal plate has some indistinct sutural rings.

M. R. de Sagra (*Cuba Rept.* t. 1) evidently figures the same species as the *Hicotee*.

†† *Back uniform or black spotted; sternal and lower side of marginal plates dark-edged, sometimes spotted.*

30. Emys rugosa. The Dark Hicotee.

Shell ovate, oblong, rather tubercularly keeled, hinder edge slightly serrated; sternum brown, sometimes dark-spotted; shield dark-edged; shields rugulose, areola indistinct, margin dark-edged; vertebral shields: first long, urceolate; second, third and fourth long, six-sided; fifth broad, six-sided; marginal shields yellow, black-dotted. "Animal brown; head and nape greyish, with a pale streak from the back of each eye."—*Sagra.*

Emys rugosa, *Gray, Syn.* 36; *Cat. Tort. B.M.* 24.
Dum. & Bib. Erp. Gén. ii. 284; *Cat. Méth. R.* 12.
Sagra, Cuba Rept. t. 2.
Testudo rugosa, *Shaw, Zool.* iii. 28. t. 4.
Hab. West Indies; Cuba; Jamaica?

Var. 1. Back mottled and lined; sternal shield one-coloured, with a distinct dark edge.

Emys rugosa, *Sagra.*

Var. 2. Back spotless or with a few scattered round spots; the dorsal, marginal and sternal shields with a regular dark brown edge.

Emys rugosa, *Gosse, Jam.* 189.

a. Adult (stuffed). Claws slender; sternum eroded. West Indies. From the Zoological Society.

Osteology:—

b. Adult (skeleton). Three middle front claws very long, slender, compressed. St. Domingo. From the Paris Museum.

"Emys decussata ♂," *Mus. Paris.*

c. Half-grown (shell only). Back and sternum rather discoloured. West Indies.

Var. 3. Back brown, closely black-dotted; sternum and under side of margin very closely spotted; sternal shields dark-edged.

Emys vermiculata, *Gray, Cat. Tort. B.M.* 25.

d. Shell only (adult). West Indies?

M. R. de Sagra (*Rept. Cuba*, t. 2) represents the head as having a pale central frontal streak and a broad pale band from the hinder edge of the orbit.

The shell is vermiculated with black above, and with regular dark edges to the sternal shields and the lower side of the marginal shields.

The head is much smaller than in *E. rugosa*, and the branches of the lower jaw are not so wide apart or so much rounded in front.

††† *Shell one-coloured; sternum black, yellow on the sides and margin; lower margin variegated.*

31. Emys scabra. The Rough Emys.

Shell oblong, convex, brown, slightly keeled, flattish above, and shelving on the sides; shields blackish-edged; nuchal very short; vertebral keeled, the first produced in front between the marginal plates. Head blackish, with an orange spot on each nostril, a band over each eyebrow, and a large spot on each side of the nape; tail short.

Emys scabra, *Gray, Syn.* 25; *Cat. Tort. B.M.* 20.
Testudo scabra, *Latr. Rept.* i. 148.
Daud. Rept. iii. 129.
Bell, Test. t. 1, 2, adult.
La Rabotteuse, *Lacep. Q. O.* i. 161. t. 10, young.
Testudo verrucosa, *Latr. Rept.* i. 156.
Daud. Rept. ii. 134.
Emys dorsata, *Schoepff. Test.* 136.
Schweig. Prod. i. 297—325.
Testudo punctularia, *Daud. Rept.* ii. 549.
Schweig. Prod. 305.
Gray, Syn. 25. 13.
Dum. & Bib. Erp. Gén. ii. 243; *Cat. Méth. R.* 9.
Schlegel, Faun. Japon. 55.
Rhinoclemys (punctularia), *Fitz.*
Hab. Tropical America; Cayenne; Brazils.

a. Very young; just hatched (stuffed). Areola rugose, closely and minutely tubercular. South America.

Lacep. Q. O. t. 10.

b, c. Young (in spirits). Upper part of the marginal plates with short black vermiculated lines; the lower side yellow, with fewer tortuous similar lines on both sides of the body.

d. Adult (in spirits). The lower part of the marginal plate pale. Neck with line of small black dots. Bad state. From the Zoological Society.

OSTEOLOGY. *Cuv. Oss. Foss.* v. 204. t. 12. f. 44, young sternum.

In our adult and three young specimens there is a spot on each side of the nose, a streak commencing from the middle of the orbit, diverging to the sides of the nape, a spot on each side of the middle of that part, and a narrow streak on the temple from the upper and lower part of the back edge of the orbit, and the neck is marked with several narrow black lines on the sides.

Mr. Bell's figure of the adult (*Testudinata*, t. 1) differs from these in representing the superciliary bands as being united by a short transverse band in front.

32. Emys D'Orbignii. D'ORBIGNY'S EMYS.

Shell ovate, swollen, nearly smooth, keelless, slightly toothed behind, chestnut-brown, with a black dorsal streak and large triangular black spots on the edge of the disk; first vertebral shield pear-shaped; marginal plates brown, with a large central yellow marginal spot. Sternum black, irregularly edged with yellow. Head and neck yellow-lined, with a broader streak from the back edge of the eyes along the sides of the neck; legs with broad yellow streaks; toes webbed; claws acute; crown with numerous yellow streaks; upper jaw nicked.

Emys D'Orbignii, *Dum. & Bib. Erp. Gén.* ii. 272; *Cat. Méth. R.* 11.
D'Orbigny, Voy. Amér. Mérid. Rept. v. 6. t. 1.
Gray, Cat. Tort. B.M. 22.

Hab. South America; Buenos Ayres. Mus. Paris.

33. Emys dorsalis. The NEW GRANADA EMYS.
TAB. XIV. *a.*

Shell oblong, convex, rather elongate, keelless, slightly toothed behind, dark brown; shield smooth, slightly grooved, and rather paler on the edge; first vertebral four-sided, the second, third and fourth six-sided, about as long as broad. Sternum blackish, with a broad pale band on each side, and on the edge of the anterior and posterior shields; crown and cheeks black, with a broad pale streak from the nostril over the orbit and on the sides of the occiput, a broad sinuous streak from the upper part of the back edge of the orbit and another more sinuous beneath it. Lips and throat yellow. Legs and feet yellow, black spotted and streaked.

Emys dorsalis, *Spix, Bras.* t. 9. f. 1, 2.

Hab. New Granada; River Buonaventura. J.O. Goodridge, Esq.

a. Adult (in spirits). New Granada. Presented by the Admiralty from Haslar Hospital.

Emys dorsalis (*Spix, Test. Bras.* 11. t. 9. f. 1, 2) probably represents the young of this species, as the marks on the head agree with those on our specimen. This figure has been referred to *E. scabra*, but the form of the head bands, if they are correctly figured, at once separates it from that species.

6. CHRYSEMYS.

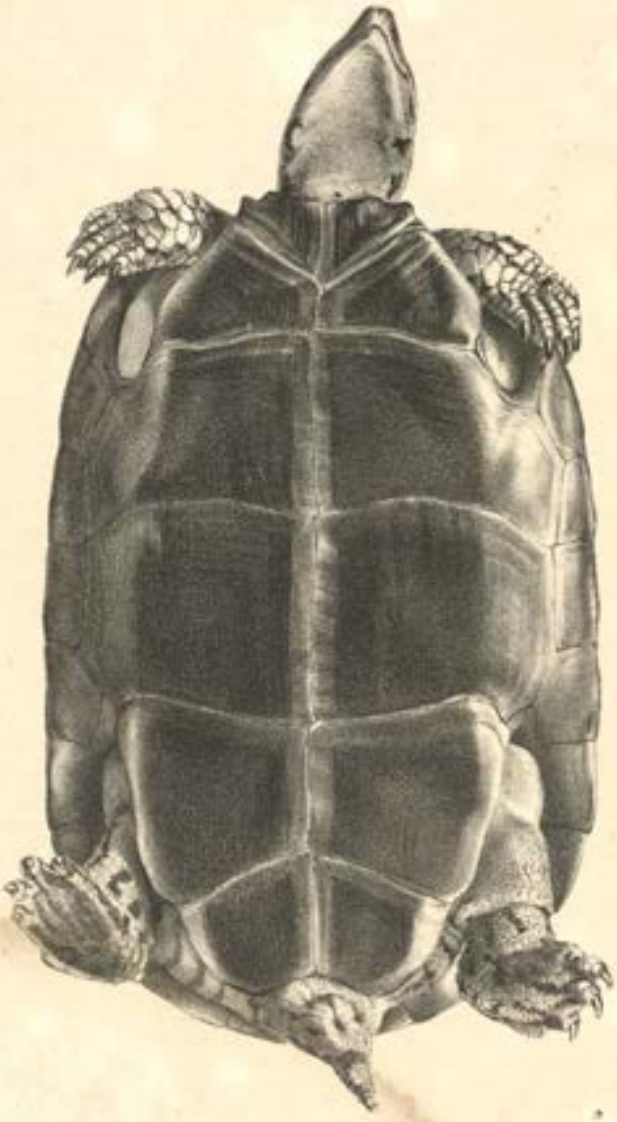
Head covered with a thin hard skin, oblong; forehead rather convex. Eyes subsuperior. Beak naked; upper with two small teeth in front; lower beak extended behind, covering the rounded lower edge of the lower jaw. Fore legs covered with large transverse shields. Toes short, strong, shortly webbed, covered with band-like scales above. Claws 5·4, compressed, arched, the three middle front often much elongated, subequal. Tail moderate. Shell depressed. Sternum solid, broad, truncated before and behind, affixed to the thorax by a bony symphysis covered at the end by the pectoral and abdominal shields; axillary and inguinal plates moderate, distinct. Shield very thin, smooth; the marginal plates with a subcentral marginal areola, surrounded with dark-edged concentric rings; the humeral plate triangular; the pectoral narrow, square.

Chrysemys, *Gray, Cat. Tort. B.M.* 27 (1844).
Emys (type), *Bell, Zool. Journ.* iii. 515.

1. Chrysemys picta. The PAINTED TORTOISE.

Shell oblong, depressed, keelless, very smooth; shields thin, olive-brown; discal shield with a broad yellow or red front margin; vertebral shield with a narrow central line; sternum yellow. Head and throat black, yellow-lined; tail long, slender.

Emys picta, *Schweig. Prod.* 306.
Merrem, Tent. 23.
Gray, Syn. 26; *Cat. Tort. B.M.* 27.
Dum. & Bib. Erp. Gén. ii. 297; *Cat. Méth. R.* 12.
Holbrook, N. A. Herpet. ii. 19. t. 3; ed. 2. i. 75. t. 10.
De Kay, 12. t. 5. f. 10.
Testudo picta, *Herm., Schneid. Schildk.* 348.
Schneiff. Test. t. 4.
Leconte, Ann. Lyc. N. Y. iii. 115.



Testudo picta, *Shaw, Zool.* t. 10. f. 1.
Seba, Thesaur. i. t. 80. f. 5, young.
T. cinerea, *Brown, Illust.* t. 48, young (dry).
Shaw, Zool. t. 12.
Schœpff. Test. t. 3. f. 2, 3.
Emys cinerea, *Schweig. Prod.* 306.
Merrem, Tent. 24.
Terrapene picta, *Bonap. Obs. Cuv. R. A.* 158.
Cyclemys picta, *Wagler, Syst.* 137.

Hab. North America, in ponds (never in running water), from Canada to Virginia.

Var. 1. Pale-edged, the front of the discal plates broad; the lateral angle of the second, third and fourth vertebral plates anterior; the marginal plates with a yellow central spot and a broad concentric ring above, and a large yellow spot beneath.

a. Adult animal (dry). Front claws very long, slender. North America. Dr. Mantell's Collection.

b. Adult animal (dry). North America. Presented by Dr. J. E. Gray.

c. Young (from spirits).
Testudo cinerea, *Brown.*

f. Adult (stuffed). Claws rather long, slender, acute. North America. Presented by Henry Doubleday, Esq.

g & *h.* Adult (stuffed). Three middle claws of front feet very long, slender. North America.

i. Adult (in spirits). Claws moderate, strong. New York. Mr. Brandt's Collection.

j. Half-grown (in spirits). Claws moderate, strong, curved; sternum with angular spots on inner edge, some having a pale eyed spot in the centre. New York. Mr. Brandt's Collection.

Osteology:—

d. Adult shell. North America.

e. Adult (upper shell only). North America. From Dr. Mantell's Collection.

Var. 2. The yellow edge to the discal plates narrow, uniform; the outer angles of the vertebral plates in the middle of the margin; the marginal plates with a small central marginal spot and two or three interrupted pale rings above, a large spot and a pale ring with a broad black edge beneath.

k. Adult (stuffed). Claws short, strong, curved; sternum plain-coloured. North America.

l. Adult shell. Sternum with a large central dark blotch, pale lined and dotted.

These Tortoises may be seen in great numbers in ponds, basking in the sun on rocks or logs, plunging instantaneously into the water on the approach of any one. They die in a very few days after being taken from the water. The young are more brilliantly coloured than the older ones.—*Leconte.*

Wagler regards *Emys marmorata, Spix, Bras.* t. 10, as this species, instead of *E. vulgaris.—Syst.* 137.

2. Chrysemys Bellii. Bell's Emys.

Shell oblong, solid, rather depressed in the centre, convex on the sides, olive, waved with irregular black-edged pale-dotted greenish lines placed on the edge and across the middle of each shield; vertebrals nearly square, first urceolate, the rest six-sided; margin beneath black, yellow-dotted; sternum flat, surrounded with an irregular yellow edge; front edge deeply denticulate.

Emys Bellii, *Gray, Syn.* 31; *Cat. Tort. B.M.* 27.
Dubs. & Bib. Erp. Gén. 302; *Cat. Méth. R.* 12.
E. speciosa, *W. Clift, Cat. Mus. Coll. Surg.* no. 1525 (not *Gray*).
Emys Origonensis, *Harlan, Amer. Journ. Sci.* xxxi. 382. f. 31.
Holbrook, Amer. Herpet. ii. t. 1; ed. 2. t. 107. t. 16.
Gray, Cat. Tort. B.M. 23.
Wied, Voy. Amér. Sept. iii. 303.

Hab. North America? Mus. Coll. Surg.

M. Bibron observes, that he has seen several specimens of this species in the "different London Museums;" the only one that has occurred to me is the one above described.

Dr. Holbrook's figure of *Emys Origonensis* (t. 21), in the dentated margin, and in the colouring of the sternum, greatly resembles this species, but the back is rather differently coloured, and the sternum is truncated behind. It is probably only an accidental variety.

††† *Toes slender, elongate, covered with small scales or nearly naked, very largely webbed; claws conical, scarcely curved.*

7. PSEUDEMYS.

Head moderate, covered with a thin hard skin, ovate; forehead convex. Eyes subsuperior. Chin flat, not bearded; branches of the lower jaw dilated, flat, covered with a soft thin skin. Fore legs covered with band-like scales. Toes slender, rather elongate, covered with scales, or with a smooth skin, widely webbed to the end of the toes. Claws 5·4, acute, rather compressed, straight or slightly curved. Tail moderate. Shell rather depressed. Sternum solid, truncated before, nicked behind, affixed to the thorax by a bony symphysis, covered by the end of the pectoral and abdominal shields; axillary and inguinal plates moderate, distinct.

This genus is chiefly distinguished from *Emys* by the flattened under jaw and the small size of the lower beak, the under jaw being chiefly covered with a soft skin, and by the slenderness of the toes and the breadth of the web, which most resembles that of the genus *Batagur*.

The annulated spot on the under surface of the marginal plate on all the species I have examined is on the suture, so as to occupy a portion of two neighbouring shields.

* *Jaws entire; upper only slightly nicked in front.*

Vertebral plates with three longitudinal, oblong, annulated spots, sometimes interrupted, each part forming an eyed spot; the costal plates with two or three annulated spots, the larger and principal one on the hinder margin sending out pale diverging tortuous lines which separate the spots and transversely divide the shield into halves.

1. Pseudemys concinna. The Neat Emys.

Shell oblong, smooth, keelless, olive-brown, pale ringed and lined, with a pale streak across each costal shield, with several unequal-sized more or less oblong annulated spots on each shield; margin with a pale central cross-band above, with an oblong sutural spot beneath; sternum yellow, clouded with black, especially near the suture of the plates. Head olive; neck and feet yellow-lined, with a broad lateral streak from the back of each eye. Fore legs with two yellow streaks; webs with a triangular yellow spot on the margin between each claw.

Emys concinna, *Dum. & Bib. Erp. Gén.* ii. 289.
Gray, Cat. Tort. B.M. 25.
Holbrook, N. A. Herp. ed. 2. i. 119. t. 19.
Testudo concinna, *Leconte, Ann. Lyc. N. F.* iii. 106.
Terrapene concinna, *Bonap. Obs. Reg. Anim.* 156 (1830).

Hab. North America; Savannah and Congaree Rivers.

a. Adult (stuffed). Back keelless; costal with a square ring in the upper hinder angle of the first and second, which is rather lower down on the third plate, and with many curved lines subconcentric in front and below them. North America. From the Zoological Society.

b. Young. Back slightly keeled behind; the rings on the vertebral and costal plates well marked; the principal annulated spot on the hinder margin is on the upper part of the first and the lower of the third plate. Sternum pale yellowish, edges of the plates darker clouded. North America, Louisiana. Mr. Smith's Collection.

Emys concinna, *Holbrook, N. Amer. Herp.* t. 19.

c. Adult (stuffed). North America, Louisiana. Mr. Smith's Collection.

d. Very young. Sternum with a large black spot, forming a dark band on the central line and a series of spots on each side, and a narrow transverse line across the front edge; a round spot on the outer edge of the pectoral and abdominal shields near the symphysis. Head and legs yellow-lined, a central frontal line, and a narrow line from the hinder upper and the middle of the lower edge of the orbit. Mexico. M. Parzudaski's Collection.

M. Leconte's figure, which is engraved by Dr. Holbrook, is a moderately good representation of our younger specimen. It chiefly differs in the marks on the shell being rather too regular and distinct, the streak on the head broader, and the toes are represented as covered with scales; but both these and the claws show that it belongs to this genus.

I have received the young *Emys ornata* from Paris under this name.

2. Pseudemys? hieroglyphica. The Hieroglyphic Emys.

Shell oval, depressed, keelless, smooth, entire in front, elongated and imperfectly serrated behind; sternum oblong, nicked behind, dingy yellow, sides olive varied. Head very small, upper jaw slightly emarginate, lower jaw with a tooth; first vertebral urceolate; each costal shield with four or five, and each marginal with dark spots with concentric yellow lines.

Emys hieroglyphica, *Holbrook, N. Amer. Herpet.* i. 47. t. 2; ed. 2. i. 111. t. 17.
Gray, Cat. Tort. B.M. 26.
Dum. Cat. Méth. R. 12.

Hab. North America; Cumberland River.

A large species; the shell of the adult about 12 inches long.

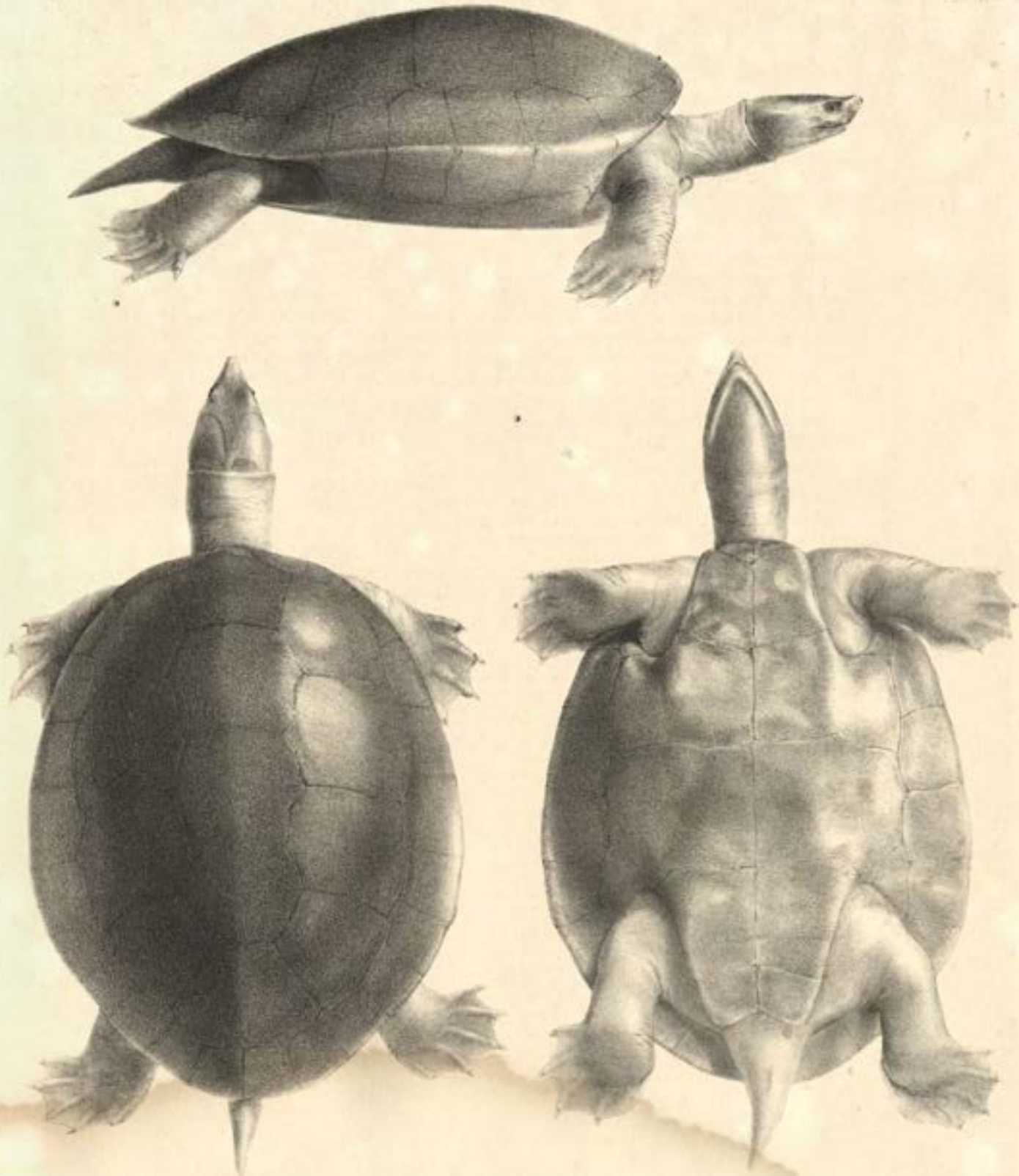
I am induced to refer this Tortoise, which I have not seen, to this genus, from the disposition of the colours, which resembles that of the preceding species.

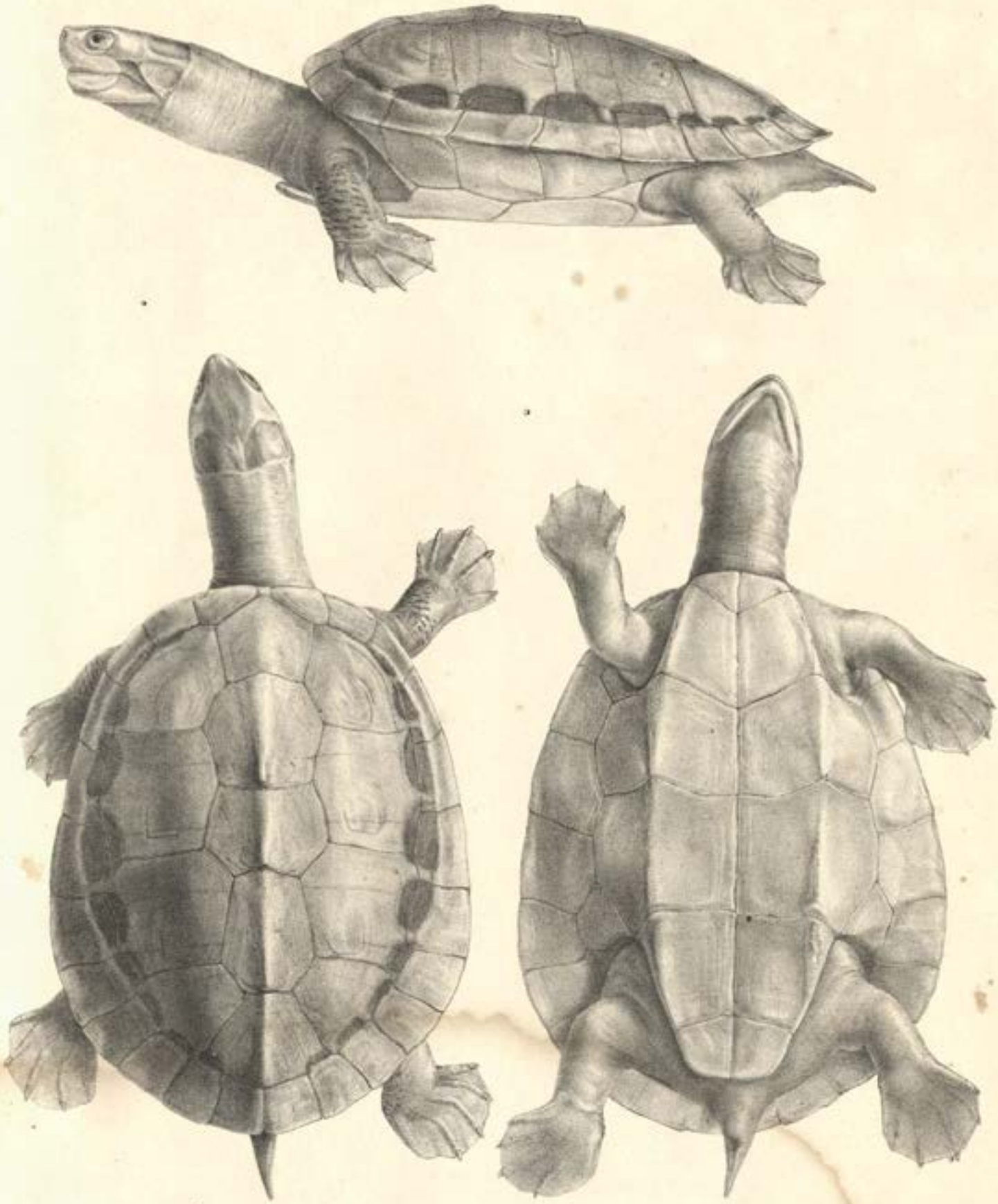
** *Jaws with two strong teeth above and three below in front.*

Costal shield with a double subcentral cross band, containing an oblong ringed spot in the upper part of the first, the middle of the second, and the lower part of the third costal plate.

3. Pseudemys serrata. The Potter.

Shell oblong, longitudinally rugose, slightly toothed behind; olive-brown, varied with irregular pale cross bands;





EMYS LINEATA

vertebral shields bluntly keeled; first urceolate, rest long, sides shelving, beneath yellow, with slightly eyed spots on the sutures of the marginal plates; sternum flat, darker clouded, with a dark-edged pale streak on the sutures, between the outer sides of the sternal and marginal plates. Head and neck with two broad streaks; jaws strongly toothed.

Emys serrata, *Say, Journ. Acad. Philad.* iv. 204.
Harlan, Amer. Herpet. 78.
Gray, Syn. 29; *Cat. Tort. B.M.* 21.
E. serrata, var., *Schlegel, Faun. Japon.* 58.
E. irrigata, *Bell, MSS.*
Dum. & Bib. Erp. Gén. ii. 276; *Cat. Méth. R.* 10.
E. reticularia, *Bell, MSS.* (not *Say*).
Testudo rubriventris, *Leconte, Ann. Lyc. N. Y.* iii. 101.
Dum. & Bib. Erp. Gén. ii. 281.
Holbrook, N. A. Herpet. 7. t. 6; ed. 2. i. 55. t. 6.
De Kay, 16. t. 7. f. 3.
Terrapene rubriventris, *Bonap. Obs. Reg. Anim.* 154 (1830).

Hab. North America; in running water with rocky beds. "Between the Delaware River and Chesapeake Bay. Sold in the Philadelphia markets as the *Potter* or Red-bellied Terrapen. The flesh is not greatly esteemed."—*Holbrook.*

a. Just hatched (stuffed). The upper jaw distinctly bidentate. Head and jaws yellow-streaked. North America.

Osteology:—

b. Adult skeleton. North America.

A large species; shell of the adult 11 to 12 inches long.

8. BATAGUR.

Head moderate, covered with a thin skin; chin not bearded. Feet largely webbed. Toes 5 · 5; the outer on each foot often clawless. Claws conical. Tail moderate. Shell oval, rounded, depressed. Sternum solid, broadly truncated before, nicked behind, affixed to the thorax by a bony symphysis, covered with the end of the pectoral and abdominal plates. Axillary and inguinal plates large. End of cavity contracted. Skull. Tab. XXXVI. fig. 4.

Tetraonyx, *Lesson, Bélanger's Voy.* 297; *Illust. Zool.* t. 7 (not *Lutr.*).
Dum. & Bib. Erp. Gén. ii. 338; *Cat. Méth. R.* 15.
Gray, Cat. Tort. B. M. 29.
Cyclemys, sp., *Bell.*
Clemmys (Tetraonyx), *Fitz. Syst. Rept.* 29 (1842).
Tetronyx longicollis, *Fitz. Syst. Rept.* 29.
Trionyx, sp., *Gray, Syn. Rept.* 5.

* *Claws* 4 · 4, *strong. Back convex; the gular plates very small, transverse.* Batagur.

1. **Batagur Baska.** The Batagur. Tab. XVI.

Back olive; adult not keeled; first vertebral plate nearly square, as broad as long; second, third and fourth broad, urceolate, or rather six-sided, rather longer than broad; gular plate very narrow, scarcely wider in the centre, band-like; anal plate shorter than broad.

Tetraonyx Batagur, *Gray, Cat. Tort. B.M.* 29.
Emys Batagur, *Gray, Syn.* 24; *Illust. Ind. Zool.* iii. t. 8.
Testudo Batagur, *B. Hamilton, MS.*
Emys Baska, *Gray, Illust. Ind. Zool.* t. , from *B. Hamilton, MS. Icon.*
Tetraonyx Baska, *Dum. & Bib. Erp. Gén.* ii. 341; *Cat. Méth. R.* 15.
Emys Spengleri, var., *Schlegel, F. Japon.* 51.
Emys Tetraonyx, *Schlegel, F. Japon.* 43, young.
Tetronyx longicollis, *Lesson, Bélanger's Voy.* 297; *Illust. Zool.* t. 7.
Tetraonyx Lessonii, *Dum. & Bib. Erp. Gén.* ii. 338. t. 16. f. 1; *Cat. Méth. R.* 15.
Trionyx Cuvieri, *Gray, Syn. Rept.* 5, very young.

Young.

Emys dentata, *Gray, Syn. Rept.* t. 8; *Illust. Ind. Zool.* t. , upper figure only.

Hab. India; Bengal; Ganges; River Iriwaddy, Pegu (*Reynaud*).

a, b. Adult (stuffed). The space between the ribs not quite closed. India; Ganges. Mr. Blyth's Collection.

** *Claws* 5 · 4, *small, weak. Back convex; the gular plates triangular.* Kachuga.

2. **Batagur lineata.** The Kachuga. Tab. XVII.

First vertebral plate four-sided, about as long as broad, the second, third and fourth six-sided, second as long as broad, the fourth considerably longer than broad; the gular plate short, triangular; the anal as long as broad. "Head bluish-ash; cheek and chin yellow-varied; eyebrow and nape scarlet-lined; chin with two yellow spots; tail long."

Emys lineata, *Gray, Syn.* 23; *Cat. Tort. B.M.* 17.
Dum. & Bib. Erp. Gén. ii. 335; *Cat. Méth. R.* 15.
Testudo kachuga, *B. Hamilton, MSS.* cop.
Emys kachuga, *Gray, Illust. Ind. Zool.* t. 74.
E. tectum, var., *Schlegel, F. Japon.* 51.

Hab. India; Nepaul.

a. Young animal (stuffed); the second and third vertebral shields strongly keeled, ending in a tubercle behind; the fourth and fifth sharply keeled. Nepaul. Capt. Boys' Collection. Tab. XVII.

Osteology:—

b. Shell of half-grown. Vertebral plates obscurely keeled; sides not quite ossified. Tanks and nullahs near Saharumpoor. Presented by Dr. Falconer.

c. Adult (shell). Dark olive above; vertebral plates not keeled; sides quite ossified. Nepaul. Presented by B. H. Hodgson, Esq.

d. Very young (plate only the size of the areola); second and third vertebral plates nodose; hinder margin of shell subdentate. India. Capt. Boys' Collection.

Like *B. Baska*, but differs in the number and size of the claws, and also in the shell becoming entirely solidified when only half the size.

3. Batagur Dhongoka. The Dhongoka. Tab. XVIII.

Olive, with three black streaks; vertebral plates keeled; first, second and fourth urceolate, longer than broad; third as broad as long; sternum deeply notched behind; gular plate triangular; the anal plates rather shorter than broad.

Emys Dhongoka, *Gray, Illust. Ind. Zool.* ii. t. , cop.
Testudo Dhongoka, *B. Hamilton, MSS.*
E. lineata, var., *Dum. & Bib. Erp. Gén.* ii. 335; *Cat. Méth. R.* 15.
Gray, Cat. Tort. B.M. 17.
E. tectum, var.? *Schlegel, F. Japon.* 51.
E. Duvaucellii, *Dum. & Bib. Erp. Gén.* ii. 334; *Cat. Méth. R.* 14.
Gray, Cat. Tort. B.M. 15.
Hardw. Icon. ined. Rept. t. 2.
Hab. India; Nepaul.

a. Young (stuffed). Olive, with three black streaks, and sides of the back darker; vertebral plates keeled; the second and third tubercular on the hinder edge. India; Ganges at Sultanpoor, near Benares. Tab. XVIII.

Emys trivittata, *Dum. & Bib. Erp. Gén.* ii. 331; *Cat. Méth. R.* 14.
Cantor, Rept. Malay. A.
Gray, Cat. Tort. B.M. 17.

Osteology. Tab. XXXVI. fig. 1, skull.

b. Adult (shell only). The three streaks narrower and less distinct; vertebral plates obscurely keeled. India.

c. Adult (upper shell only). Second vertebral plate produced, angular behind. Nepaul. Presented by B. H. Hodgson, Esq.

d. Adult (upper shell only). The second vertebral plate rather truncated. Nepaul. Presented by B. H. Hodgson, Esq.

e. Skull. Nepaul. Presented by B. H. Hodgson, Esq. Tab. XXXVI. fig. 1.

f. Adult shell, broken on the sides. India. From the Zoological Society.

"Emys Duvaucellii," *Bibron, MSS. Cat. Zool. Soc.*

g. Half-grown shell, narrow. Hinder edge serrated; second vertebral plate with a very distinct, acute, spine-like keel. India. From the Zoological Society.

Emys lineata, *Bibron, MSS. Cat. Zool. Soc.*

The figures in the *Illustrations of Indian Zoology* are from a young specimen with rather deformed vertebral plates.

4. Batagur ocellata. The Eyed Emys.

Shell entire, nearly hemispherical (keeled when young); dorsal plates brown, each marked with a yellow-edged black spot; vertebral plates: first pentagonal, rest six-sided; tail short; jaws toothed.

Emys ocellata, *Dum. & Bib. Erp. Gén.* ii. 329. t. 15. f. 1; *Cat. Méth. R.* 14.
Gray, Cat. Tort. B.M. 18.
Hab. India; Bengal (*Bélanger*). Mus. Paris.

**** Claws* 5·4, *small, weak. Back high, subangular.*
Pangshura.

5. Batagur tecta. The Pangshure.

Shell ovate oblong, solid, olive, with a central interrupted red streak; back angularly elevated, compressed; vertebral shields elongated, six-sided; the first, second and third keeled, each produced and subtubercular behind; margin quite entire, shelving; sternum flat, keeled, sides high, sloping, pale, with regular black spots. Head olive, with two broad orange converging streaks; neck with close olive lines.

Emys tecta, *Bell, Test.* t. 1. f. 1–4.
Gray, Syn. 23. t. 25; *Illust. Ind. Zool.* ii. t. 72. f. 1, 2; *Cat. Tort. B.M.* 13.
Dum. & Bib. Erp. Gén. ii. 321; *Cat. Méth. R.* 14.
Schlegel, F. Japon. 51.
E. trigibbosa, *Lesson, Bull. Sci. Nat.* xxv. 121.
Bélanger, Voy. 29.
Testudo Pangshure, no. 4, and T. Khagraskata, no. 16, *B. Hamilton, MSS.*, cop. *Gray, Ill. Ind. Zool.*
Hab. India; Bengal.

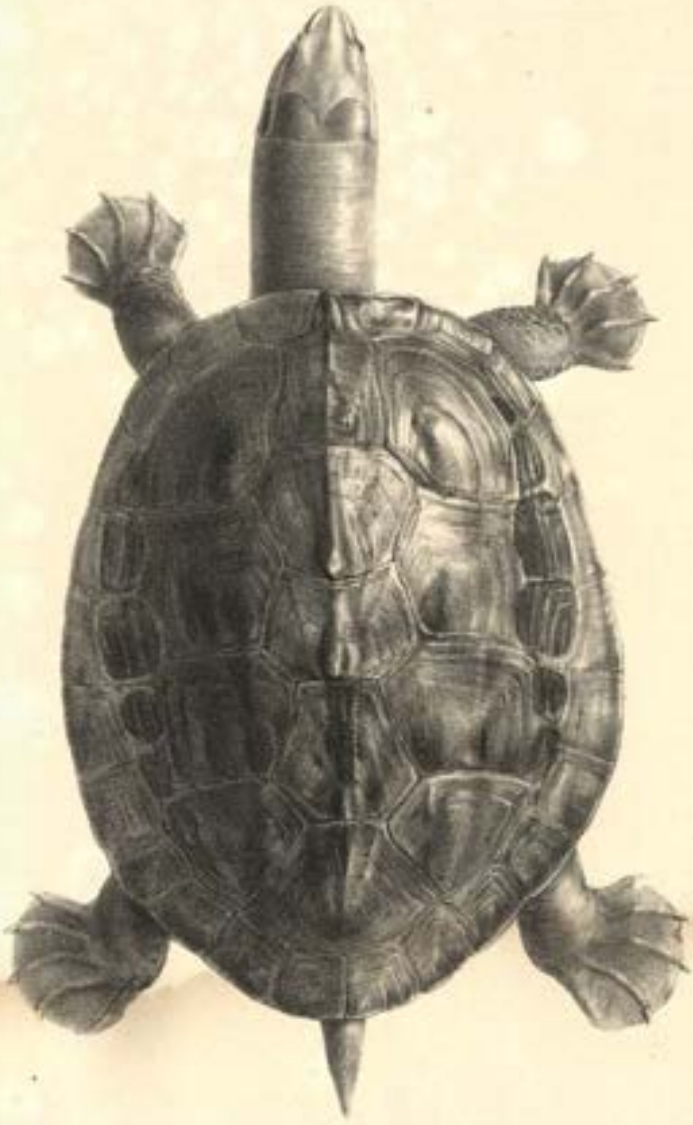
a, b, c. Adult (stuffed). India. From M. Piquot's Collection.

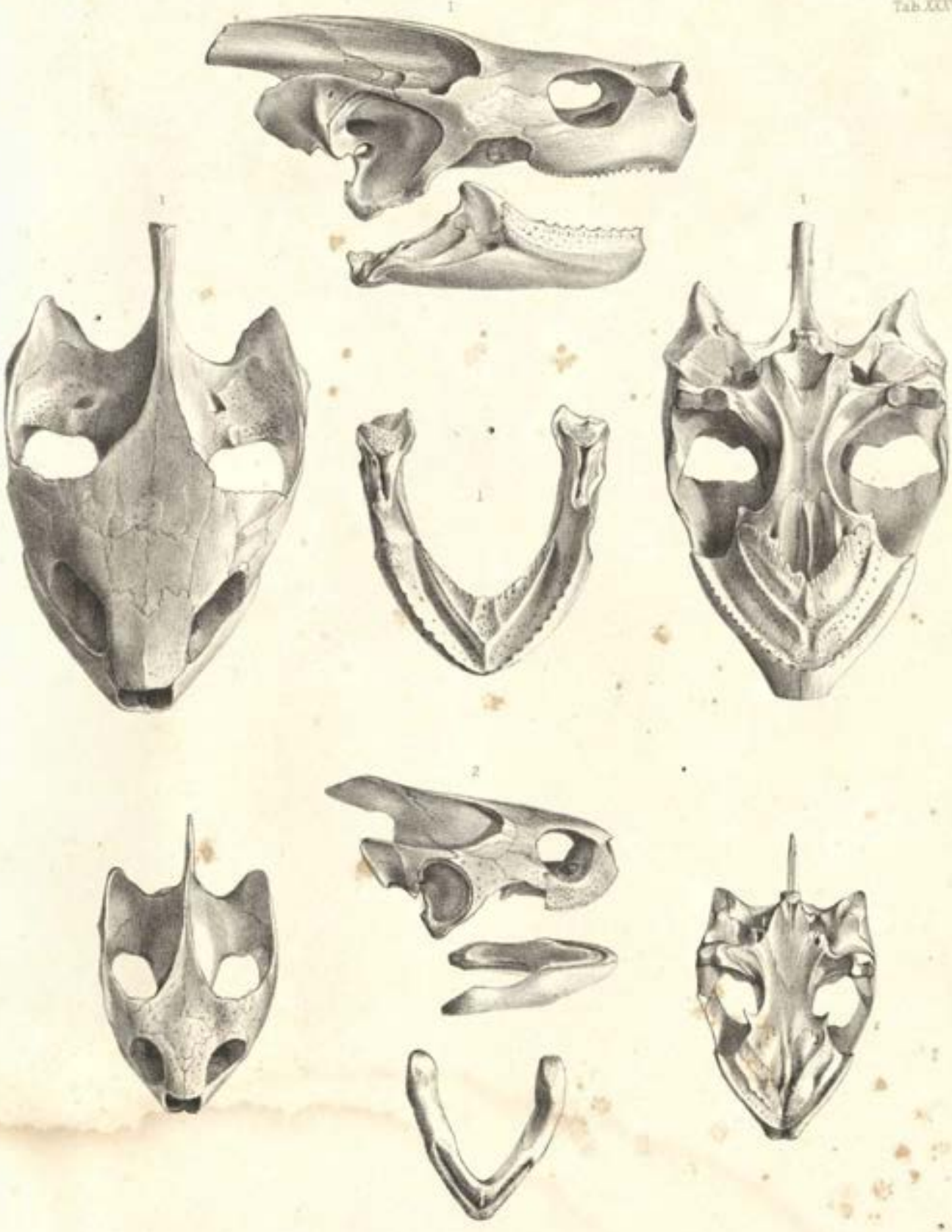
d. Adult (in spirits). India.

e. Adult (stuffed). India. Presented by Dr. J. E. Gray.

Legs covered with broad thin shields in front, fringed on the outer side; the toes with a series of small, narrow, six-sided shields on the middle of the upper surface.

Schlegel regards *E. lineata, E. Batagur, E. Dhongoka*





1 BATAGUR DHONGOKA. 2 EMYS DECUSSATA.

and *E. Kachuga* as varieties of this species, an opinion for which he has no ground, as he says he has not seen any of them.

6. Batagur tentoria. The-Dura.

Shell ovate oblong, olive, with a blackish keel; back rather angularly compressed; shields slightly rugose; the first vertebral one four-sided, as broad as long, the rest elongated, six-sided, keeled, the keel (of the third especially) produced behind into a tubercle; margin dentated behind; the marginal and sternal plates yellow-keeled; sternum slightly elevated, and keeled on the sides, blackish, with yellow margins and edges to the plates. Head and neck brown, darker dotted and clouded.

Emys tentoria, *Gray, Proc. Zool. Soc.* 1834; *Cat. Tort. B.M.* 15.

E. tectum, adult, *Gray, Illust. Ind. Zool.* t. 72. f. 3, 4, 5.

Testudo Dura, *B. Hamilton, Icon. ined.* t. , *MSS.*

Hab. India; Deccan; Mysore?

a. Adult (stuffed); 6 inches. The third vertebral shield almost as broad as long; sternum low. Deccan. Presented by Colonel Sykes.

b. Half-grown (stuffed). Olive; hinder part of the foot, and the strong keel of the second and third vertebral shields, and a small spot on the middle of the hinder edge of the costal shields, blackish; the second and third vertebral shields broader than long, areola posterior; sternum high.

c. Half-grown (stuffed). India. From Capt. Boys' Collection.

This species differs from *B. tecta* in the keel of the discal plates being blackish, not red, with black edges, and in the sternum not being spotted.

9. MALACLEMYS.

Head very large, depressed; crown flat; temples and nape covered with a soft spongy skin. Beak exposed; lower beak large, convex beneath. Chin not bearded. Legs short. Fore legs with very thin reticulated scales. Toes rather short, strong, covered with a few very thin shields, united by a broad, nearly naked web to the claws. Claws 5·4, subequal, curved, sharp. Tail conical. Shell depressed, oblong. Sternum solid, truncated before, nicked behind, affixed by a bony symphysis; axillary and inguinal plates distinct; discal and marginal plates with a subcentral areola surrounded by concentric rings or series of spots. Living in salt-water marshes: moves quickly on land; torpid in winter. Egg oval: flesh well-flavoured. America.

Malaclemys, *Gray, Cat. Tort. B.M.* 28.

Emys § **, *Gray, Ann. Phil.* x. 1825, 211.

Terrapene, sp., *Bonap. Obs. Cuv. R. A.* 157 (1830).

Emys, sp., *Dum. & Bib. Erp. Gén.* ii. 261; *Cat. Méth. R.* 10.

1. Malaclemys concentrica. Salt-water Terrapen.

Shell oval, rather convex, slightly tuberculately keeled; shields (and the bone under them) pale yellow, marked with brown concentric rings, which are often impressed. Animal grey, black-spotted and lined.

Malaclemys concentrica, *Gray, Cat. Tort. B.M.* 28.

Testudo concentrica, *Shaw, Gen. Zool.* iii. 43. t. 9. f. 1.
Gray, Syn. 27.
Bell, Test. t.
Dum. & Bib. Erp. Gén. ii. 261; *Cat. Méth. R.* 10.
Holbrook, N. A. Herpet. i. 87. t. 12.
De Kay, Rept. N. York, 10. t. 3. f. 4.

Terrapin, *Brown, Jam.* 466.

Le Terrapene, *Lacep. Q. O.* i. 129.

Testudo Terrapin, *Schoepff. Test.* 64. t. 15.
Holbrook, N. A. Herpet. ii. 13. t. 2.

Testudo palustris, *Gmel. Syst. Nat.* i. 1041?
Leconte, Ann. Lyc. N. Y. iii. 113.

Testudo centrata, *Latr. Rept.* i. 145.
Daud. Rept. ii. 153.

Emys centrata, *Schweig. Prod.* i. 304.
Say, Journ. Acad. Nat. Sci. Philad. iv. 205.
Harlan, Rept. N. Amer. 77.
Merrem, Tent.
Gray, Ann. Phil. x. 211.

Emys livida, *Bell, MSS.*

Salt-water Terrapin, *Leconte, Southern States N. Amer.*

Terrapene palustris, *Bonap. Obs. Cuv. R. A.* 157.

Hab. North America, in salt-water marshes, from New York to Florida; and West Indies.

Var. 1. *concentrica.* Head black-lined; limbs black-spotted; shield smooth; dorsal and sternal shields with well-defined dark rings.

a. Animal (stuffed) and shell; smooth, highly coloured. Head with large black lines on the cheeks. North America. Presented by Gen. Th. Hardwicke.

Var. 2. Head black-speckled; shield more or less deeply concentrically grooved, with dark rings. Sternum and lower side of marginal plates with dark rings.

j. Half-grown animal (dry). North America.

g. Adult (shell only). North America.

Var. 3. *centrata.* Head black-speckled; shield more or less deeply concentrically dark-grooved. Sternum and lower part of marginal plates black-dotted and clouded.

Testudo centrata, *Latr.*

b. Adult (stuffed). North America. Presented by the Earl of Derby.

c. Adult (stuffed). North America. Presented by Gen. Th. Hardwicke.

d. Adult (stuffed). Shields smooth; hinder costal plate distinctly ringed. North America. Presented by Gen. Th. Hardwicke.

e. Adult (in spirits). North America.

k. Adult animal (dry: not good state). Back obtusely and interruptedly keeled; dorsal shield rugose, dark brown; sternum brown, with dark edge to the shields. North America. From the Zoological Society.

Var. 4. *tuberculifera.* The three central vertebral plates with a central tubercle, the hinder tubercle orbicular.

k. Shell only (young). California. Mr. J. Drummond's Collection.

Malaclemys tuberculifera, *Gray, Cat. Tort. B.M.*

Var. 5. *areolata.* Head small; back elevated.

Emys areolata, *Dum. & Bib. MSS.*
Dum. Cat. Rept. Mus. d'Hist. Nat. 10. no. 7*.
Hab. Central America; Peten (*Morelet*).

OSTEOLOGY :—

f. Shell only. North America.

i. Skeleton of *Var.* 1. North America. Zoological Society.

Skull oblong; forehead convex, shelving towards the temples; orbits large, rather close together, shelving upwards, enabling the animal to see above it.

Mr. Bell, in his *Testudinata*, beautifully figures several specimens from life, showing the variations in the colouring of the animal. The animal varies in intensity from pale grey to blackish, and the spots on the temples, nape, neck, limbs and tail vary in size and depth, and are sometimes joined together into lines, which are often symmetrical on the two sides of the head.

"As an article of food it is much preferred to any other species, particularly when dug out of the marshes in a torpid state: immense numbers are annually brought to market. The males are small, and have the concentric striæ more deeply impressed than the females."—*Le-conte.*

The very young specimens are about two inches long, pale brown; shields with narrow concentric lines; second, third, and front half of the fourth vertebral plate with a very broad rounded keel. Sternum brown-dotted; plates pale-edged, with a line of spots on the front and hinder edge. Mus. Bell.

A very young specimen in spirits in the Museum of the College of Surgeons, named "*Testudo picta.*" The shell is pale brown; each of the costal shields has two concentric very narrow rings near the margin, and an irregular ring in the centre, the continuity of which is often more or less interrupted. The vertebral plates have a similar double ring, but both the marginal and central ones are more irregular and interrupted. The upper surfaces of the marginal plates are each marked with a single submarginal ring and a larger central spot. The sternal shields are brown-dotted, with a brown band near the margin of each.

b. Sternum divided by a central cross suture, attached to the thorax by a ligamentous suture, covered by the end of the pectoral and abdominal shields; sternal plates 12; *axillary and inguinal plates very small.*

Emydidæ § *a, b, Gray, Cat. Tort. B.M.* 13.
Emydidæ § *a, Bell, Zool. Journ.* ii. 514.
Cistuda, *Fleming, Phil. Zool.* ii. 270 (1822).
Cistudo, *Say, Journ. Acad. Philad.*
Dum. & Bib. Erp. Gén. ii. 207 (1835); *Cat. Méth. R.* 7.
Emys, *Wagler, Syst.* 138 (1830).
Bonap. Obs. Cuv. R. A. 161 (1830).
Fitz. Syst. Schildk. 1836; *Syst. Rept.* 29 (1843).
Pyxidemys (clausa), *Fitz. Syst. Rept.* 29.
Terrapene, Kinosternon and Sternotherus, sp., *Bell.*

M. Daudin divides the *Tortues à boîtes* (*T. clausa*) thus:—

* With both ends moveable. 1. *T. Retzii.* 2. *T. tricarinata.* 3. *T. Pennsylvanica.*—** With the hinder end only moveable. 4. *T. odorata.* 5. *T. sulmigra.* 6. *T. virgulata.* 7. *T. clausa.* 8. *T. brevicauda.*

Cuvier, *Règ. Anim.* ii. 11 (1817), ed. 2. ii. 12, adopts Daudin's divisions.

Merrem gives to the *Tortues à boîtes* the generic name of *Terrapene* (p. 27, &c.).

Mr. Bell, *Zool. Journ.* ii. 302, 486 (1826), in his paper on the Box Tortoises, forms a subfamily of *Emydidæ* for them under the name of *Sternotherina*, and refers to it the following genera:—

I. KINOSTERNON, *Spix*, containing: 1. *K. Shavianum.* 2. *K. longicaudatum.* 3. *K. brevicaudatum.* 4. *K. Pennsylvanicum.* 5. *K. Amboinense* = *Terrapene bicolor*, p. 484. 6. *K. nigricans* = *Sternotherus Leachianus.* II. STERNOTHERUS, *Bell*, containing: 1. *S. trifasciatus* (t. 13). 2. *S. Leachianus* (t. 14), which is the same as *K. nigricans.* 3. *S. odoratus.* 4. *S. Boscii* = *Kinosternon Pennsylvanica*; the

same as *Kinosternon*, as regarded by Daudin. III. TERRAPENE, *Merrem*. 1. *T. Europæa*. 2. *T. Carolina*. 3. *T. maculata* (pp. 309, 486). 4. *T. nebulosa* (pp. 309, 484); both mere varieties of *T. Carolina*. To these, at p. 484 of the same volume, is added as a new species: 5. *T. bicolor* (t. 16), said to come from North America, but it proves to be the same as *Kinosternon Amboinense* of the former paper.

† *Legs with large scales in front; toes narrowly webbed, shielded above.*

10. CISTUDO.

Head moderate, covered with a thin, hard, continuous skin; forehead flat: Eyes lateral. Legs covered with large angular shields, those on the inner side broadest. Toes short, very narrowly webbed to the claws. Tail short. Shell ovate, convex, solid. Sternum broad, rounded before and behind, completely closing the cavity of the thorax, affixed to it by a ligamentous symphysis, and divided by a cross suture between the pectoral and abdominal plates; the front lobe very large, almost entirely free from the symphysis; sternal shields 12; inguinal and axillary plates none; marginal plates 25 or 27; nuchal plate small. North America.

Cistudo, sp., *Say, Journ. Acad. Philad.*
Cistudo, *Dum. & Bib. Erp. Gén.* ii. 201 (1855); *Cat. Méth. R.* 7.
Cistuda § *, *Fleming, Phil. Zool.* ii. 270.
Cistuda, *Gray, Syn. Rept.* 17 (1831); *Cat. Tort. B.M.* 29 (1844), misprint.
Cistula, *Gray, Ann. Phil.* x. 211, misprint.
Wagler, Syst. 138.
Les Tortues à boîtes (part.), *Daud. Rept. Cuv. R. A.* ii. 11; ed. 2. ii. 12.
Terrapene, sp., *Merrem, Tent.* 27.
Terrapene, *Bell, Zool. Journ.* ii. 308, iii. 514.
Emys, Pyxidemys, and E. Emys, *Fitz. Syst. Schildk.* 123 (1836).
Sternotherus, sp., *Bell, Zool. Journ.* ii. 308.
Kinosternon, sp., *Bell, Zool. Journ.* ii. 308.
Emys § 1. Cistuda, *Bonap. Obs. Cuv. R. A.* 162.
Pyxidemys (clausa), *Fitz. Syst. Rept.* 29 (1843).
Cyclemys, *Bell, Zool. Journ.*
Fitz. Syst. Rept. 29 (1843).
Terraphene, *Gray, Ann. Phil.* x. 211 (1825), misprint.
Emys, *Fleming, Phil. Zool.* ii. 270 (1822).
Fitz. Syst. Rept. 29 (1843).
Les Clausiles, *Dum. & Bib. Erp. Gén.* 210.

The most terrestrial of the Box Tortoises, with short, strong, scarcely webbed toes. The legs are like those of a Land Tortoise.

* *Claws* 5·4 = Cistudo.
** *Claws* 5·3 = Onychotria.
* *Claws* 5:4. Cistudo.

1. **Cistudo Carolina.** The BOX TORTOISE.

Shell hemispherical, slightly keeled, brown, yellow-varied; shields grooved; marginal plates 23–27. Animal black, yellow or red spotted.

Cistudo Carolina, *Gray, Syn.* 18; *Cat. Tort. B.M.* 29.
Testudo Carolina, *Linn. Syst. Nat.* i. 352?
Dum. & Bib. Erp. Gén. ii. 210; *Cat. Méth. R.* 7.
Holbrook, N. A. Herpet. iii. 9. t. 1.
T. brevicauda, *Lacep. Q. O.* i. 164.
T. clausa, *Gmel. Syst. Nat.* i. 1043.
Daud. Rept. ii. 207.
Schoepff. Test. t. 7.
Leconte, Ann. Lyc. N. Y. iii. 124.
Shaw, Zool. t. 7.
Guér. Icon. t. 1. f. 2.
T. virgulata, *Latr. Rept.* 100.
Dugal. Rept. ii. 201. t. 23.
T. incarcerata and T. incarcerata striata, *Bonnat. Ency.* 29.
T. carinata, *Linn. Syst. Nat.* i. 353.
Schneider, Schildk. 361.
Emys dubia, *Schweig. Prod.*
E. Schneideriì, *Schweig. Prod.* 317.
Terrapene guttata (or T. maculata), and Ter. nebulosa, *Bell, Zool. Journ.* ii. 309.
La Bombe, *Lacep. Q. O.* i. 164.
Cistuda Blandingii, *Holbrook, N. A. Herpet.* iii. 35. t. 5?
The Box Tortoise, *Grew, Mus.* 38. t. 3. f. 2.
Edw. Birds, t. 205.
Checkered Tortoise, *Penn. Arct. Zool.* ii. 228.
Emys (Pyxidemys) Schneideri, E. (P.) virgulata, and E. (P.) clausa, *Fitz. Syst. Schildk.* 123.
Terrapene clausa, *Merrem, Tent.*
Gray, Ann. Phil. x. 211.
Emys (Cistudo) clausa, *Bonap. Obs. Cuv. R. A.* 162.
Emys (Pyxidemys) clausa, *Fitz. Syst. Rept.* 29.
Emys β. clausa, *Wagler, Syst.* 138.
Emys β. virgulata, *Wagler, Syst.* 138.
Testudo Carolinana, *Schneider*, 33. no. 7.
T. virgines, *Grew, Mus.* t. 3. f. 2.
Cistudo clausa, *Say, Journ. Acad. Philad.* iv.
Terrapene clausa, *Merrem, Tent.*
Terrapene carolina, *Bell, Zool. Journ.* ii. 309.
Terrapene "subretosa, *Bell*," *Leconte.*
Land Turtle, *Northern States N. America* (*Leconte*).
Pine barren Terrapen, *Southern States N. America* (*Leconte*).

Very young? Emys (Emyoides) kinosternoides, *Gray, Syn.* 32; *Cat. Tort. B.M.* 27.

E. cinosternoides, *Dum. & Bib. Erp. Gén.* ii. 303; *Cat. Méth. R.* 12.

Hab. North America, from Hudson's Bay to Florida. Martinique (*Plée*).

a. Adult (stuffed). Shell yellow, black-rayed; beneath brown. North America. Presented by Dr. J. E. Gray.

b. Adult (stuffed). Black, yellow-spotted. North America. Presented by Dr. Jacob Green.

e. Young animal (dry). Discoloured from spirits. North America. Presented by Gen. Th. Hardwicke.

i. Adult animal (dry). Shell yellow, black-rayed. North America. Presented by Gen. Th. Hardwicke.

j. Adult (stuffed). Shell brown, paler rayed, with few yellow spots. North America.

k. Adult (stuffed). Shell black, yellow-spotted, rather elongate, beneath brown. North America. Presented by H. Doubleday, Esq.

l. Adult. Shields pale, darker rayed. North America, Louisiana. Mr. Smith's Collection. Called "Woodland and Cane-brake Tortoise."

m. Adult animal (dry). Shell black, with large yellow spots and rays. North America.

n, o, p. Adult (stuffed). Large shields pale. North America. Mr. Smith's Collection.

OSTEOLOGY:—

h. Adult (upper shell only). Shields black, with large yellow spots.

g. Adult (upper shell only). Like "*h*."

d. Adult (upper shell only). Shields pale, black-rayed.

c. Adult (upper shell only). Wanting some shields.

f. Adult (shell only). Back and sternum brown, with large yellow marks.

q. Skeleton (adult). Male. North America. From the Paris Collection.

Skull rather high; forehead flat, rather shelving towards the nose; nose truncated; sides of face perpendicular; orbits lateral.

The shell is so hard and the animal so strong, that it can easily walk with 60 lbs. on its back. Its food consists of fresh insects and the edible fungi, particularly the species of *Clavaria*. Many persons are in the habit of keeping them in their cellars, where they destroy snails, crickets, and other noxious insects. It may be questioned if they ever attempt, as has been said, to devour rats and mice; they are not well formed for the pursuit of such active animals, who have too much sense to suffer themselves to be caught by so sluggish a hunter. The same may be said of the ridiculous stories of their catching and destroying snakes.—*Leconte*.

"This species has been cited as an example of longevity among animals of the lower class: all tortoises are long-lived, but the finding of an individual with a name and date engraved on its sternum proves nothing; the idle and foolish are fond of inscribing their names everywhere, and may as well antedate the time by half a century as state the true year of their attempt at immortality."—*Leconte*.

** *Claws* 5·3. *Vertebral plates* 6. Onychotria.

Onychotria, *Gray, Proc. Zool. Soc.* 1849, 16.

2. Cistudo Mexicana. The THREE-TOED BOX TORTOISE.

Shell oblong, dark brown, pale spotted and rayed, spots and rays sometimes confused; vertebral plates with a nearly continuous keel, and with a small intermediate one between the usual fourth and fifth plate; hinder margin acute, revolute. Head pale brown; fore-legs yellow or orange spotted, hinder uniform brown; sternum flat, gular plate wider in front and gradually narrowed behind.

Cistudo (Onychotria) Mexicana, *Gray, Proc. Zool. Soc.* 1849, 17. *Rept.* t. 2.
Cistudo Carolina, var., *Dum. Cat. Méth. R.* 7.

Hab. Mexico; New Orleans.

a. Adult (stuffed). Shell: back high, compressed, shelving; plate black, yellow-rayed. Mexico. Mr. Warwick's Collection.

b. Adult (stuffed). Shell oblong, evenly convex; plate yellow, black-marbled. Mexico. Mr. Warwick's Collection.

11. LUTREMYS.

Head ovate; forehead rather convex; cheeks sloping. Eyes subsuperior. Legs covered with large thick scales in front; those of the outer side ovate, keeled; of the inner broad, band-like. Toes short, thick, covered with band-like shields above, well webbed to the ends; claws 5·4, short, curved. Tail conical. Shell depressed, rounded. Sternum broad, rounded before, rather truncated behind, entirely enclosing the limbs when they are contracted. The cross suture between the anterior and the posterior lobe in the middle of the short sterno-costal suture. Axillary and inguinal plates very rudimentary.

Les Bâillantes, *Dum. & Bib. Erp. Gén.* 221 (1835).
Lutremys (part.), *Gray, Cat. Rept. B.M.*
Emys (§ 2. Emys), *Bonap. Obs. Cuv. R. A.* 164.
Fitz. Syst. Schildk.; *Syst. Rept.* 29 (1843).
Fleming, Phil. Zool. ii. 270.
Emys *a*, *Wagler, Syst.* 138 (1830).

1. Lutremys Europæa. The SPECKLED TORTOISE.

Shell depressed, ovate, brown, with radiating lines of yellow dots; sternum slightly nicked behind. Head and body black, yellow-dotted; tail elongate.

Cistudo Europæa, *Gray, Syn.* 19; *Cat. Tort. B.M.* 31.
Dum. & Bib. Erp. Gén. ii. 220; *Cat. Méth. R.* 7.
Eichw. Faun. Casp. Cauc. 44.
Schlegel, F. Japon. 52.
Testudo Europæa, *Schweig. Schildk.* 323.

Testudo Europæa, *Shaw, Zool.* iii. t. 8.
Schœpff. Test. t. 1.
Bojanus, Anat. t.
Stürm, Fauna, t. *a*, *b*, *c*.
Wagler, Amph. t. 5. f. 8, 9.
T. flava, *Lacep. Q. O.* 135. t. 6.
T. punctata, *Gottw. Schildk.* t. *k*. f. 12.
T. orbicularis, *Linn. Syst. Nat.* i. 351.
Wulff, Boruss. 3.
T. lutraria, *Rondel. Pisc.* ii. 170.
Gesner, Q. O. ii. 113. f. 5.
Aldrov. 710.
Brünn. Adriat. 91.
T. pulchella, *Schœpff.* t. 26, young.
T. Meleagris, *Shaw, Nat. Misc.* iv. 144 (shell polished).
Emys Hellenica, *Valenc. Voy. Morea*, t. 8. f. 2.
E. antiquorum, *Valenc. Voy. Morea*, t. 8. f. 1.
? E. capensis, *Fitz. Syst. Schildk.*
E. Hoffmanni, *Fitz. Syst. Schildk.*
E. orbicularis, *Valenc.*
E. Europæa, *Valenc. Zool. Morea*, t. 8. f. 1.
Fitz. Syst. Rept. 29 (1843).
E. *a*. Europea, *Wagler, Syst.* 138. t. 5. f. 8, 9.
E. (Emys) lutraria, *Bonap. Obs. Cuv. R. A.* 164.

Hab. Europe; France; Sicily; Morea; North Asia; North Africa; Algeria; ? Japan. Mus. Leyden.

f. Young (in spirits). Shell black, yellow spotted on edge of shields. Europe. Mr. Brandt's Collection.

b. Shell and dry animal. Brown, yellow-dotted; 6½ inches. Europe.

c. Young. Hinder half only, with dry animal. Brown, paler rayed. Presented by Thomas Bell, Esq.

Testudo pulchella, *Schœpff.*

d. Young (in spirits). Animal white dotted; shell pale brown, brown-rayed. Albania. Presented by W. W. Saunders, Esq.

g. Adult (stuffed). Europe. From the Haslar Hospital Museum.

i. Adult. (in spirits). Europe. From the Zoological Society.

k. Adult. Dorsal shell. Shield only; carious, covered with a thick rough coat. Presented by H.R.H. Prince Bonaparte (Charles Lucien).

OSTEOLOGY:—

Bojanus, Anat. Test. Europ. t. 1, 31.
Cuv. Oss. Foss. v. 184. t. 11. f. 13–16, skull; t. 12. f. 2, clavicle.
Emys Europæa, *Wagler, Syst.* t. 5. f. 20–28.

a. Adult (shell only). Black, yellow radiately dotted. South Europe.

e. Adult (shell only). Back convex; plate black, yellow-lined. Europe. Mus. Zool. Soc.

h. Skeleton. Europe.

The areola of the young specimen is marked with dark-edged sinuous lines on the discal shields, and a subcentral ring on the marginal ones; these marks are sometimes to be seen on the areola of the plates of the adult. The other parts of the shields are destitute of any rings, and generally radiately spotted and streaked.

†† *Legs with thin band-like shields in front. Toes broadly webbed, with small scales above.*

12. CUORA.

Head covered with a thin skin, rhombic; forehead flat; cheeks flat. Eyes lateral. Legs strong, covered with broad, band-like, transverse shields. Toes strong, covered with distinct band-like shields above, widely webbed to the toes. Claws 5·4, strong, curved, acute. Tail moderate. Shell convex, very solid, three-keeled, at least when young. Sternum broad, rounded behind and before, completely closing the cavity of the thorax; the front lobe large, affixed behind, with the cross suture nearly in the middle of the bony sterno-costal symphysis; anterior lobe large, with the hinder part enclosed in the symphysis; sternal shields 12; axillary and inguinal shields small, distinct; marginal plates 25; nuchal plate small. Asia.

Shell convex, like *Cistudo*. The legs and feet are those of an Asiatic *Emys*.

1. Cuora Amboinensis. The Cuoro.

Shell hemispherical, slightly three-keeled, blackish; margin broad, expanded; nuchal shield linear; sternum black and yellow varied. Animal blackish, yellow-varied; head dark, with two broad yellow streaks on the side from the nose.

Cistudo Amboinensis, *Gray, Syn.* 19; *Cat. Tort. B.M.* 30; *Illust. Ind. Zool.* t.
Dum. & Bib. Erp. Gén. ii. 215. t. 15. f. 2; *Cat. Méth.* E. 7.
Testudo amboinensis, *Daud. Rept.* ii. 309.
T. Couro, *Lesechen: Mus. Par.*
Emys Amboinensis and E. Coura, *Schweig. Prodr.* i. 214, 315.
Terrapene bicolor, *Bell, Zool. Journ.* ii. t. 16.
Emys Couro, var., *Schlegel, F. Japon.* 64.
E. (Pyxidemys) Couro, *Fitz. Syst. Schildk.* 122.
Terrapene Couro, *Fitz.*
Emys clausa (part.), *Bonap.*
E. β. Couro, *Wagler, Syst.* 138.
Cistuda Amboinensis β. Leveriana, *Gray, Syn.* 29.

Hab. Amboina; Batavia; Sumatra; Manilla; China? Soohog; Java. Called *Couro* (*Leschenault*).

a. Adult (stuffed). Shell rather elongate; 6½ inches. India. Presented by Thomas Bell, Esq., F.R.S.

b. Young. Head and feet dry; shell broad, three-keeled; 2¾ inches. *Illust. Ind. Zool.* t. 6. Presented by Dr. J. E. Gray.

c. Very young (in spirits). With granular shields, and the costal shields with a keel rather above the centre. Philippine Islands. From Mr. Cuming's Collection.

d. Half-grown (in spirits). Granular areola posterior, marginal. Philippine Islands. From Mr. Cuming's Collection.

e. Half-grown (stuffed). Singapore.

f. Adult (in spirits). Amboina. From the Leyden Museum.

g. Half-grown (stuffed). Asiatic Islands. Mr. Warwick's Collection.

h. Adult (stuffed). Shell ventricose, high. Malacca. Presented by Commander John Ince, R.N.

k. Very young (dry). Slightly three-keeled.

Osteology:—

i. Skeleton of adult. Amboina. From the Leyden Museum.

Cuora Amboinensis is called "*Baning*" by the Malays of the Peninsula; it is numerous in the ponds, rivulets and paddy-fields in the valley of Pinang. The dorsal keels become obsolete with age, and the margins of the shell, particularly the hinder part, become revolute.—*Cantor.*

Schlegel regards *Emys castanea, E. subniger, Terrapene bicolor, Sternotherus trifasciatus* and *St. Leachianus* as varieties of this species.

Leconte most erroneously confounds this with *Cistudo Carolina.*

2. Cuora trifasciata. The Three-streaked Coura.

Shell subovate, hemispherical, solid, keeled, dull yellow, red and black varied, with three blackish dorsal streaks. Sternum bifid behind. Head yellow, with two horizontal black streaks on the side of the head and neck, upper wider, with a triangular paler spot in front and two larger oval ones behind.

Cistudo trifasciata, *Gray, Syn.* 19; *Cat. Tort. B.M.* 31; *Illust. Ind. Zool.* t.
Dum. & Bib. Erp. Gén. ii. 219; *Cat. Méth. R.* 7.
Sternotherus trifasciatus, *Bell, Zool. Journ.* ii. 299. t. 13.
Wagler, Syst. 137.
Emys Couro, var., *Schlegel, F. Japon.* 64.
E. (Pyxidemys) trifasciata, *Fitz. Syst. Schildk.* 123.
E. trifasciata, *Voigt.*

Hab. China.

a. Adult (stuffed). Shell subovate. China. Presented by J. Reeves, Esq.

e. Very old (stuffed). Shell oblong, like *a.* China. Mus. Zool. Soc.

e. Adult (dry). Shell elevated, thick, worn on the surface. China. Presented by J. Reeves, Esq.

Osteology:—

d. Upper shell only. Like *a.* China.

b. Very old; deformed. Shell much depressed and expanded. China. Presented by J. Reeves, Esq.

13. CYCLEMYS.

Head ovate, covered, with a thin skin; forehead rather convex. Eyes subsuperior. Legs strong, covered in front with thin, broad, band-like, transverse shields. Toes strong, covered with small scales above, webbed to the claws; claws 5·4, short, curved, acute. Tail moderate. Shell convex, solid, edge-toothed behind. Sternum rounded in front, truncated behind, narrower than the cavity, not covering the legs when contracted, with a distinct process on each side to form the symphysis. The cross suture between the anterior and posterior lobe in the middle of the long sterno-costal suture, so that both lobes are equally attached to the thorax. Asiatic.

This genus has the same shield-like and well-webbed toes as *Emys* and *Cuora*, but differs from the latter in the sternal lobes being narrower than the opening of the thorax, so that, as in *Emys*, it does not cover the legs when they are contracted. This similarity has induced naturalists to place the species in the genus *Emys*, overlooking the fact of the lobes being mobile.

Cyclemys, *Bell, Proc. Zool. Soc.* 1842, 17.
Fitz. Syst. Rept. 29 (1843).
Les Bâillantes (part.), *Dum. & Bib. Erp. Gén.* ii. 221.

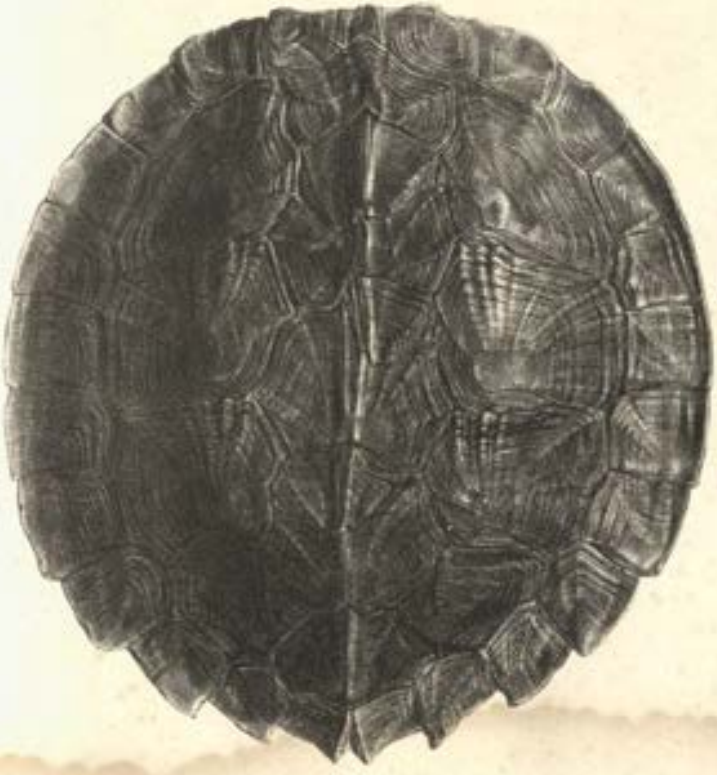
1. Cyclemys dentata. The Dhor. Tab. XIX.

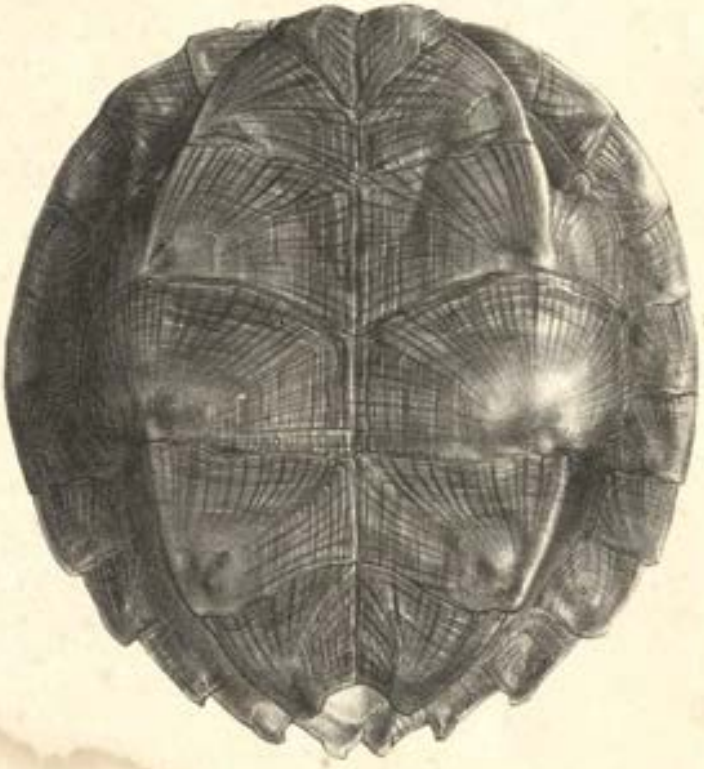
Shell suborbicular; back flattened, keeled, hinder edge toothed; sternal shields yellow, brown-rayed.

Cistuda dentata, *Gray, Cat. Tort. B.M.* 32.
Emys dentata, *Gray, Illust. Ind. Zool.* t. , lower fig., young.
E. Dhor or E. dentata, *Gray, Syn.* 20. t. 8, 9.
E. Hasseltii, *Boie, Mus. Leyd.*, young.
E. Spengleri, var., *Schlegel, F. Japon.* 51.
Cyclemys orbiculata, *Bell, Proc. Zool. Soc.* 1824, 17, adult.
Fitz. Syst. Rept. 29.
Cistuda Diardi, *Dum. & Bib. Erp. Gén.* ii. 227; *Cat. Méth. R.* 8.
"Testudo Diardii," *Mus. Leyden.*
Tetraonyx affinis, *Cantor, Cat. Rept. Malac.* 6?

Hab. Java; Batavia; Borneo; Pinang (*Cantor*).

Var. 1. Sternum raised on the sides.
Bell, Testudinidæ, viii. t. 3, lower figure.





a. Young (in *spirits*). *Suborbicular, depressed*, brown, black-dotted, bluntly keeled, edge acutely toothed; vertebral plates square, as broad as long; sides of neck and throat yellow-lined; feet yellow-spotted. Java. Presented by Thomas Bell, Esq.

b. Young (in spirits). Java. From the Leyden Museum.

d. Half-grown (skeleton). Front dorsal plate broader; plates rugose, radiated. Java. Tab. XIX.

Var. 2. Sternum nearly flat, the lobes rather broad, somewhat like a *Cuora*.

Bell, Testudinidæ, viii. t. 3, upper figure.

Osteology:—

c. Adult (skeleton). First dorsal narrow, arcolate; plates worn. Java. From the Leyden Collection.

Dr. Cantor describes three very young specimens of a Tortoise (the largest being only 2½ inches long), which were taken on the sea-shore of Pinang, under the name of *Tetraonyx affinis*. The Malays assert that this Tortoise also inhabits estuaries and rivers in the Peninsula, and that it grows to a considerable size. The outline of the shell and its composing shields strikingly resemble the young of *Cyclemys orbiculata*, Bell!—*Cat. Rept. Penins.* 6.

There can be little doubt that the above were the young of this species, which often has only 4 claws on the feet.

2. Cyclemys platynota. The Flat-backed Emys.

Shell ovate, convex, yellow-dotted, with the centre of the back quite flat, as if truncated; shields striated; areola of discal shield central, of costal superior; vertebral shields broader than long, 6-sided, 5th keeled; the front and hinder margin strongly toothed. Sternum flat, truncated before and slightly nicked behind. Tail moderate, tapering.

Emys platynota, *Gray, Proc. Zool. Soc.* 1834; *Illust. Ind. Zool*, t. ; *Cat. Tort. B.M.* 16.
Cantor, Rept. Malay. Penins. 3.
E. Reevesii, adult?, *Dum. Cat. Méth. R.* 15?

Hab. Sumatra (*Müller*); Pinang (*Cantor, Cat.* 3); Cochinchina (*Diard*).

a. Adult (stuffed). Sumatra?

b, c, d. Adult, and half-grown (stuffed). Head yellow, varied with a broad yellow streak on each side of the nape; throat yellow-streaked. Singapore. Mr. Wallace's Collection.

e. Young. Shell only, with the ribs about half closed; vertebral plate with two costal plates, with one raised black spot on the middle of the hinder edge of the nucleus. Singapore. Mr. Wallace's Collection.

f. Very young. Shell very thin, with the black spot only very indistinctly marked.

They are called "Katong" by the Malays in the Peninsula. The head and neck, shell, tail and feet of the adult living animal are dirty yellowish or greenish brown, which becomes paler on the sternum. The nuclei of the vertebral shields are slightly raised; the costal shields are depressed, their sides sloping towards the nuclei, thus forming as it were a very shallow hexagonal basis. The front and hind margins are broadly revolute, their toothed appearance worn off. The sternum is slightly concave in the centre. They inhabit the valleys of Pinang, and in confinement they refused to eat, and were never observed to enter a tank.—*Cantor.*

c. Sternum divided by two cross sutures; central lobe attached to the thorax by a bony symphysis, covered by the end of the abdominal shields only; sternal plates 11 *or* 8; *the axillary and inguinal plates large.*

Emydidæ § *a, c, Gray, Cat. Tort. B.M.* 13.
Terrapenina, *Gray, Ann. Phil.* x. 211 (1825).
Terrapene (part.), *Merrem, Tent.* 27.
Cistuda §, *Fleming, Phil. Zool.* ii. 270.
Emydidæ *a, Bell, Zool. Journ.* iii. 514.
Cinosternon, *Spix.*
Wiegm. & Ruthe, Handb. 166.
Kinosternon, *Bonap. Obs. Cuv. R. A.* 266 (1836).
Les Tortues à boîtes (part.), *Daud. Rept., Cuv. R. A.* ii. 11; ed. 2. ii. 12.
Terrapene, sp., *Merrem, Tent.*
Staurotypus et Cinosternon, *Wagler, Syst.* 137.
Dum. & Bib. Erp. Gén. ii. 356, 363; *Cat. Méth. R.* 16, 17.

14. KINOSTERNON.

Head moderate, subquadrangular, pyramidal, covered with a hard thin skin. Chin bearded. Feet and tail nearly naked, with a few scattered scales. Claws 5·4, rarely 4·4. Tail of male elongate, clawed. Shell ovate, three-keeled, especially when young. Sternum rounded in front, entire or two-lobed behind; middle lobe covered by the abdominal plates, fixed by a bony symphysis to the thorax; front and hinder lobes more or less free, articulated to the middle lobe: sternal shields 11; gular pair united into a triangular shield; the pectoral shields triangular, narrow on the inner edges. Axillary and especially the inguinal plates very large, covering the suture. America.

Terrapene, sp., *Merrem.*
Sternotherus, *Bell.*
Gray, Ann. Phil. x. 211 (1825).
Sternotherus, sp., *Bell, Zool. Journ.* ii. 304.
Fitz. Syst. Rept. 29 (1843).
Kinosternon, *Spix, Braz.*
Bell, Zool. Journ. ii. 302; iii. 515.

Kinosternon, *Bonap. Obs. Cuv. R. A.* 166.
Gray, Ann. Phil. x. 211 (1825); *Syn. Rept.* 24; *Cat. Tort. B.M.* 32.
Cistudo, sp., *Say, Journ. Acad. Nat. Sci. Philad.* iv. 266.
Tortues à boîtes § **, *Cuv. R. A.*
Cistuda § 2, *Flem. Phil. Zool.* ii. 270 (1822).
Cinosternon, *Wagler, Syst.* 137.
Fitz, Syst. Rept. 29.
Wiegm. & Ruthe, Handb. 166.
Duméril and Bibron, Erp. Gén. ii. 363; *Cat. Méth. R.* 16.
Cyclemys, sp., *Wagler, Syst.* 137.

a. Sterno-costal suture elongate, narrow; sternal lobes as broad as the opening. Swanka.

β. Sterno-costal suture short, broad; sternal lobes narrower than the opening. Kinosternon.

a. Sterno-costal suture elongate, narrow; sternal lobes as broad as the opening; abdominal shield longer than the front lobe of sternum. Swanka.

Swanka, *Gray, Cat. Tort. B.M.* 32 (1844).
Cinosternon, *Fitz. Syst.* 29.

1. Kinosternon scorpioides. The Swanka.

Shell oblong, rather compressed, with three continuous keels; dorsal shields longly six-sided, slightly imbricate; sternum as broad and large as the opening; anterior lobe entire, broad, longer than the middle lobe; gular plate long, triangular; symphysis narrow, as long as the abdominal shields.

Kinosternon scorpioides, *Gray, Syn. Rept.* 24; *Cat. Tort. B.M.* 32.
Belt, Test. t. — f.
Cinosternon scorpioides, *Wagler, Syst.* 137. t. 5. f. 31–43.
Duméril and Bibron, Erp. Gén. ii. 365; *Cat. Méth. R.* 16.
Kinosternon Shavianum, *Bell, Zool. Journ.* ii. 304.
Cinosternon scorpioideum, *Wagler, Syst.* t. 5. f. 44.
Fitz. Syst. Rept. 29.
Kinosternon longicaudatum, *Spix, Bras.* t. 12.
Gray, Ann. Phil. x. 211 (1825).
Bell, Zool. Journ. ii. 304.
Chersine scorpoides, *Merrem, Amph.* 33.
Cyclemys tricarinata, *Wagler, Syst.* 137.
Kinosternon brevicaudatum, *Spix, Bras.* 13.
Testudo scorpoides, *Linn. Syst. Nat.* i. 152.
Emys scorpoidea, *Schoesig. Prod.* i. 312.
Testudo Pennsylvanica, var., *Shaw, Zool.* iii. t. 15, young.
T. tricarinata, *Daud. Rept.* ii. 178.
Schoepf. Test. t. 2.
Shaw, Zool. ii. t. 11.
T. Retzii, *Daud. Rept.* ii. 174.
Emys Retzii, *Schweig. Prod.* 312.
Terrapene tricarinata, *Merrem, Tent.* 28.

Hab. Central America; Brazils; Cayenne; Honduras.

Var. 1. Hinder part of sternum entire.

b. Stuffed (not in good state; wants dorsal plates; no appearance of keels). Central America.

c. Animal dry (shell wants dorsal plates; no appearance of keels). Central America.

Kinosternon scorpoides, var. acuta, *Gray, Syn.* 14. t. 7. f. 1.

d. Adult (animal and shell, in spirits). Back very convex, rounded, distinctly three-keeled; sternum rather convex; tail very short; spine very small. Female? Tropical America. Presented by Thomas Bell, Esq.

e. Adult (animal and shell, in spirits). Back convex, rounded, distinctly three-keeled; sternum flat; tail elongate; claws very strong. Male? Tropical America.

f. Adult (stuffed). Dorsal keels very distinct, vertebral plates small; tail elongate. Mexico.

h. Adult (animal, stuffed). Discal plates very irregular; dorsal keel indistinct. Mexico.

Osteology:—

Cinosternon scorpoides, *Wagler, Syst. Amph.* t. 5. f. 31–43.

a. Shell only, swollen and convex, wanting some plates. Dorsal keels only marked by very obscure lines. Central America. Presented by Dr. J. E. Gray.

i. Adult. Back rounded; dorsal keel only marked by a very slight line.

Var. 2. Hinder part of sternum notched. Males.

l. Adult (animal, dry). Dorsal keels regular, distinct. Head very large, broad; sternum concave; tail elongate; claws large. Male?

m. Adult (stuffed). Dorsal keels regular, distinct; sternum concave, truncated behind; tail elongate; claws large. Cayenne. M. Verreaux's Collection.

k. Adult (shell). Dorsal keels regular, distinct. South America. Mus. Zool. Soc.

Var. 3. Back depressed.

Cinosternon scorpoides, var., *Dum. Cat. Méth. R.* 16.
Hab. Bolivia; Santa Cruze de la Sierra (*D'Orbigny*).

2. Kinosternon cruentatum. Blood-spotted Swanka.

Carapace swollen, oval, suddenly inclined behind, three-keeled, red-brown; sternum not nicked behind, yellow-brown. Head yellowish-green, darker above; head, neck and limbs with small blood-red lines.

Cinosternon cruentatum, *Dum. & Bib. MSS.*
Dum. Cat. Rept. Mus. H. Nat. 16.

Hab. North America (*Duméril*).

KINOSTERNON DOUBLEDAYII

1. 2. KINOSTERNON PENNSYLVANICUM. JUNIOR.
3. 4. _____ HIPPOCREPIS. JUNIOR.
5. 6. _____ PUNCTATUM, JUNIOR.

β. Sterno-costal suture short, broad; sternal lobes narrower than the opening; abdominal shield shorter than front lobe of sternum. Kinosternon.

Kinosternon, *Gray, Cat. Tort. B.M.* 33 (1844).
Staurotypus, sp., *Dum. & Bib. Erp. Gén.*
Sternotherus, *Fitz. Syst. Rept.* 29.

3. Kinosternon Pennsylvanicum. The MUD TORTOISE.

Sternum oblong, anterior and posterior lobes broad, rounded, entire; the gular shield broad, short; the pectoral and femoral shields triangular, almost reduced to a point at the inner margins. Head brown, pale marbled; temple with three streaks of small white spots from the hinder edge of the orbits; chin white-streaked and dotted; throat with three distant, very narrow white streaks.

Shell of young dark brown, with a small dark spot on the centre of each dorsal and marginal shield, and with a moderate round white spot on the under side of each marginal plate, edging the plate, a large spot on the middle of each axillary and inguinal plate, and a larger more irregular-shaped one on each sternal plate.

Shell of adult oblong, convex, not keeled, dark brown, often eroded, yellow-brown beneath.

Shell of males oblong, rather narrow; sternum flat or slightly concave; head large; tail elongate, thick, conical, with a large terminal claw:—of females oblong, rounded, broad; sternum flat or rather convex; head moderate; tail short, conical, with a small terminal spine.

Kinosternon Pennsylvanicum, *Gray, Syn.* t. 6. f. 4; *Cat. Tort. B.M.* 33.
Bell, Zool. Journ. ii. 209.
Bonap. Obs. Cuv. R. A. 167.
De Kay, Rept. New York, 21. t. 1, 2. f. 4.
Wagler, Syst. 137.
Dum. & Bib. Erp. Gén. ii. 367.
Holbrook, N. Amer. Herpet. i. t. 15; ed. 1. iii. 23. t. 3; ed. 2. 127.
Testudo Pennsylvanica, *Bosc, Rept.*
Gmelin, Syst. Nat. i. 1042.
Schœpff. Test. t. 24. f. *a.*
Shaw, Zool. t. 14. f. 2.
Daud. Rept. ii. t. 24. f. 1, 2.
Leconte, Ann. Lyc. N. Y. iii. 120.
Testudo glutinata, *Daud. Rept.* t. 24. f. 4.
Schœpff. Test. t. 24. f. 6.
Terrapene Boscii, *Merrem, Tent.*
Sternotherus pennsylvanicus, *Gray, Ann. Phil.* x. 211.
Testudo Lutraria Pennsylvanica, *Edw. Glean.* ii. 77. t. 287.
Cistudo Pennsylvanica, *Say, Journ. Acad. Nat. Sci. Philad.* iv. 266.
Emys pennsylvanica, *Schweig. Prod.* 315.
Harlan, Rept. N. Amer. 79.
Terrapene pennsylvanica, *Merrem, Tent.* 27.
Mud Tortoise, *Penn. Arct. Zool.* 80.
Mud Terapin, *Leconte, S. States America.*
La Tortue rougeâtre, *Bacep. Quad. Ovip.* i. 152.
Bosc, N. D. H.N. xxv. 267.

Male.

Kinosternon oblongum, *Gray, Cat. Tort. B.M.* 33.

Hab. North America; New York to New Orleans.

a. Adult (stuffed). Female? Shell rounded, much eroded. North America.

c, d. Young (in spirits). East Florida. Presented by Edward Doubleday, Esq.

e, f. Young (in spirits). Like *c* and *d*. North America. Presented by Capt. Sir Edward Belcher, R.N., C.B. &c.

g. Adult (*stuffed*). Female. Shell rounded; sternum entire behind. North America. Presented by H. Doubleday, Esq.

j, k. Half-grown (in spirits). North America.

b, i. Just hatched (stuffed). North America.

k, l, m, n, o. Adult (stuffed). Males and females. North America; Louisiana. Mr. Smith's Collection.

In the adult specimens from New Orleans in spirits the head is dark brown, with irregular white spots on the occiput; all of them have two broad dark-edged streaks from the back of the orbit, the upper extended along the side of the neck, the lower to the hinder end of the beak, and an intermediate small pale spot on the tympanum; these marks all become more obscure on the older specimens.

The young specimens, with the same description of colouring and from the same locality, vary a little in the comparative width and form of the lobes of the sternum, even when they have the same form of tail, which is supposed to mark the sexes.

4. Kinosternon Doubledayii. DOUBLEDAY'S SWANKA. TAB. XX.

Shell narrow, oblong, smooth, sides convex, back flattened; sternum high on the sides, lobes much narrower than the cavity, rounded in front, bifid behind, the symphysis very short.

Kinosternon Doubledayii, *Gray, Cat. Tort. B.M.* 33.

Hab. California.

a. Shell only (much worn). California.

Very like the preceding (*K. Pennsylvanicum*), but the sternum is much more raised on the sides.

5. Kinosternon punctatum. The DOTTED SWANKA.

Sternum rather lozenge-shaped; anterior and posterior lobes rather tapering, with nearly straight edges, the hinder

truncated behind; the pectoral, and especially the femoral plates, subtrigonal, moderately broad at the inner margin. Head brown, minute and closely pale-dotted, with a short oblique dark-edged streak on the hinder margin of the upper beak; throat pale-dotted; thorax brown, with a few brown dots and a small dark spot at the apex of each dorsal and marginal shield; under-side and hinder edge of marginal shields pale brown varied and lined; sternum pale, slightly dotted and marbled with blackish brown.

Hab. North America.

a. In spirits (young). Female. Shell oblong, broad. Tail small, conical. Shield granular, rounded, entire. Head brown, minutely darker dotted; temples with three streaks of small white spots from the hinder edge of the orbit; chin white streaked and dotted; throat with three distant very narrow white streaks. North America, East Florida (*E. Doubleday*).

6. Kinosternon Hippocrepis. The EYEBROWED SWANKA.

Sternum oblong, anterior lobe broad, rounded, posterior lobe broad, rather truncated behind; gular plates very narrow; pectoral and femoral plates triangular, narrow, reduced nearly to a point on the inner margin. Head brown, minutely dotted, with a broad pale streak from the nostril over the eyes to the side of the occiput; temple with a second similar streak from the lower part of the hinder edge of the orbit; throat brown; Shell of young brown, with a few brown dots and a small dark spot at the apex of each dorsal and marginal shield; and a small pale spot on the edge of each marginal shield. Sternum pale brown, shield darker edged; of adult uniform olive-brown, with black edges to the shields; beneath yellowish brown, darker varied.

Hab. North America; New Orleans (*M. Sallé*).

a, b. In spirits. New Orleans. *M. Sallé's Collection.*

c. Half-grown (stuffed). The broad yellow band margining the upper part of the nose and crown is distinct, but the streaks on the temple are not to be observed in its present state. The dorsal and marginal shields are uniform brown, with a narrow margin, especially on the hinder edge. The pectoral and abdominal plates are united together in this specimen, so that the front lobe of the sternum must have been perfectly immoveable. North America.

7. Kinosternon leucostomum. The WHITE-MOUTHED SWANKA.

Carapace ovate, smooth, rather convex, reddish-brown, hinder part slightly, back very slightly keeled; sternum not notched in front, yellow-brown. Head moderately large, depressed; jaws white; head and neck with some reddish-yellow spots.

Cinosternon leucostomum, *Dum. & Bib. Erp. Gén.* ii. 570; *Cat. Rept. Mus. H. Nat.* 17.

Hab. North America; New Orleans; Mexico; Central America; Rio Sumasinta (*Morelet*); New Grenada.

Doubtful Species.

8. CINOSTERNON HIRTIPES, *Wagler, Syst.* t. 5. f. 29, 30; *Icon. Amph.* t. 30.
Dum. & Bib. Erp. Gén. ii. 570?; *Cat. Mén. R.* 17.
Hab. America. Brazils?

15. AROMOCHELYS.

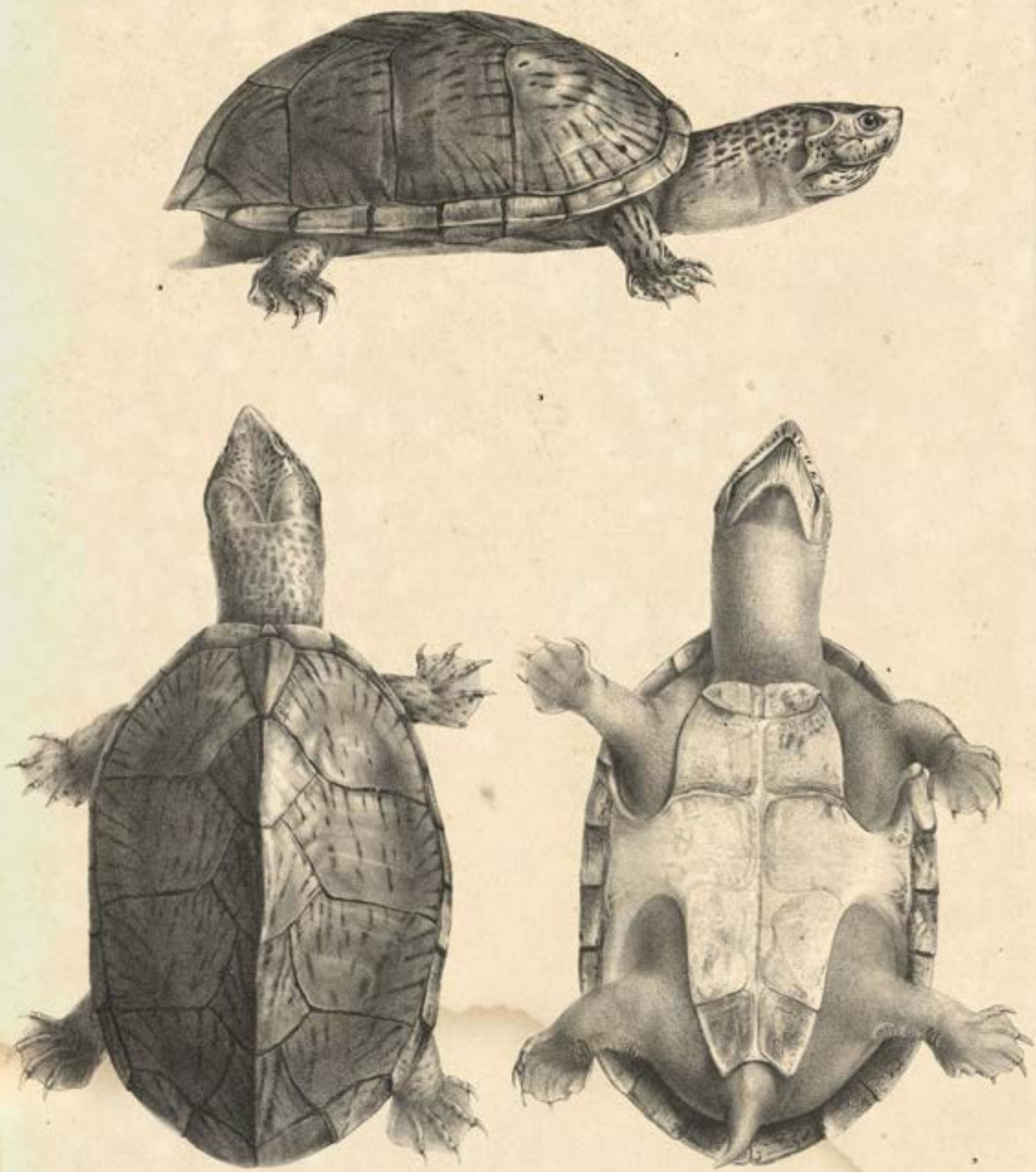
Head moderate, subquadrangular, pyramidal, covered with a hard skin. Chin bearded. Feet and tail with a few scattered scales. Toes 5·4, webbed. Tail of males clawed. Shell ovate, keeled. Sternum truncated in front, nicked behind; middle lobe covered by the abdominal plates, fixed by a bony symphysis to the thorax; front and hinder lobes narrow, more or less mobile and articulated to the middle lobe. Sternal shields 11; gular pair united, rudimentary, linear; the pectoral shields large, oblong, four-sided, transverse; axillary and inguinal plates very large, covering the suture. America. Odoriferous.

Kinosternon, sp., *Gray.*
Cistudo, sp., *Say.*
Terrapene, sp., *Merrem.*
Sternotherus, sp., *Bell, Zool. Journ.* ii.
Staurotypus, sp., *Dum. & Bib.*

1. Aromochelys odoratum. The STINK-POT.

Shell oblong, convex, rounded, not or very obscurely keeled; shields brown, dark-spotted; the gular plates triangular; the humeral plate rather oblique. Head moderate, with a white streak from the nostril over the eye, and continued on the side of the neck; a second streak from the hinder end of the upper jaw; neck with distant narrow yellow streaks.

Kinosternon odoratum, *Gray, Syn. Rept.* 35. t. 6. f. 1; *Cat. Tort. B.M.* 34.
Bonap. Obs. Cuv. R. A. ii. 168.
Testudo odorata, *Latr. Rept.* i. 122.
Daud. Rept. ii. 189. t. 24. f. 3.
Leconte, Ann. Lyc. N. Y. iii. 122.
Cistudo odorata, *Say, Journ. Acad. Nat. Sci. Philad.* iv. 206, 216.
Holbrook, N. A. Herpet. iii. 29. t. 4; ed. 2. i. 133. t. 22.
De Kay, Rept. N. York, 22. t. 7. f. 13.
Testudo Pennsylvanica, var., *Schoepff. Test.* 110. t. 24. f. B.



AROMOCHELYS CARINATA.

Testudo glutinata, *Daud. Rept.* ii. 194. t. 24. f. 4.
Terrapene Boscii, *Merrem, Tent.* 23?
Sternotherus Boscii, *Bell, Zool. Journ.* ii.
Sternotheros odoratus, *Gray, Ann. Phil.* x. 211.
Bell, Zool. Journ. ii. 299.
Fitz. Syst. Rept. 29.
Terrapene odorata, *Merrem, Tent.* 23.
Emys odorata, *Schweig. Prod.* 313, 437.
Harlen, N. H. 80.
E. glutinata, *Merrem, Tent.* 24.
Mud Tarapen, *Leconte, Southern States America.*
Staurotypus odoratus, *Dum. & Bib. Erp. Gén.* ii. 358; *Cat. Méth. R.* 16.

Hab. North America; New York; New Orleans.

a. Adult (stuffed). Shields spotted. North America; Louisiana. Mr. Smith's Collection.

b. Young (in spirits). Minutely pale brown speckled; head with a white streak over each eye, and two streaks from the back edge of the orbit; throat brown, with a broad streak of white spots. Delaware. Presented by H. Doubleday, Esq.

M. Leconte observes: "The synonyms quoted to this species show more plainly the absurdity of the proposed divisions of the Tortoise family than anything which I can say." This was perfectly just, as they were divided in 1833.

Schlegel regards *Emys Pennsylvanica, E. odorata, Staurotypus triporcatus,* and *Kinosternon hirtipes* as varieties of the same species.

2. Aromochelys carinatum. The Keeled Stink-Pot. Tab. XX. *a.*

Shell oblong, convex, sharply keeled; shields grey-brown, purple-brown spotted and streaked, and with a broad dark border edge; gular shield very small, linear, transverse; the humeral plate oblong, transverse, like but smaller than the pectoral. Head brown; crown and cheeks black-dotted (without any streaks); neck black-varied.

Hab. North America; Louisiana.

a, b, c, e. Adult (stuffed). Mr. Smith's Collection.

Osteology:—

d. Young shell only. Pale brown; bleached? North America.

16. STAUROTYPUS.

Head large, covered with a hard skin; chin bearded. Feet and tail with a few scattered scales. Claws 5-4. Shell ovate, three-keeled. Sternum very narrow, acute before and behind; middle lobe covered with the abdominal plate, which is produced on each side over the narrow bony symphysis. Sternal plates 8; the gular, humeral and pectoral plates of each side united into one; femoral and anal shields small, distinct; axillary and inguinal plates, especially the latter, large, covering the narrow suture. America.

Staurotypus, *Wagler, Syst. Amph.* 137.
Gray, Cat. Tort. B.M. 34.
Fitz. Syst. Rept. 29.
Staurotypus (part.), *Dum. & Bib. Erp. Gén.* ii. 356; *Cat. Méth. R.* 16.
Terrapene, sp., *Wiegmann.*

1. Staurotypus triporcatus. The Cross Emys. Tab. XX. *b.*

Shell oblong, convex, brown, three-keeled, the central one very large, high and cultrate behind, side ones highest in front; vertebral plates long, imbricate, anchal plates short, broad; edge indented on the side, expanded and toothed behind. Head depressed, spotted and lined with white; chin two-bearded; neck thick.

Kinosternon triporcatum, *Gray, Syn. Rept.* 76; *Cat. Tort. B.M.* 34.
Terrapene triporcata, *Wiegm. Isis,* 864 (1828).
Staurotypus triporcatus, *Bull. Sci. Nat.* xvii. 293.
Wagler, Syst. 137. t. 5. f. 44, 45; *Icon.* t. 23.
Fitz. Syst. Rept. 29 (1843).
Dum. & Bib. Erp. Gén. ii. 356; *Cat. Méth. R.* 16.

Hab. North America; Mexico; Central America; Rio Sumasinta.

a. Young (in spirits). Pale brown, varied with black. Mexico.

b. Adult. The anal plates united into one. Mexico.

Head of young animal, in spirits, large, dark brown, with small specks which are sometimes confluent into tortuous lines; temple dark, with a broad white streak from the gape, ending in a narrow white ring round the tympanum; throat with some irregular white streaks; lower jaw with two white streaks in front; chin with two small beards, and a large oblong black gland on each side of the edge of the lower beak outside of the beards. Thorax black-brown, with some broad pale markings on each dorsal and marginal shield; a black subcentral spot on each axillary and inguinal plate; the sternal shield black, with an irregular white margin.

B. *Head and tail very large; sterno-costal symphysis covered with one or three peculiar plates.*

Emydidæ § B, *Gray, Cat. Tort.* 13.

a. *Sternum cross-like, acute before; sternal plates* 10, *with a broad one on each side, over the sides of the sternum (the displaced abdominal?).*

Emydidæ § B, *Gray, Cat. Tort.* 13 (1844).

17. CHELYDRA.

Head large, rugose, covered with a soft skin; chin two-bearded; neck very thick, tubercular. Limbs large and strong, tubercular. Tail long, large, with three longitudinal series of compressed tubercles. Shell depressed, toothed behind; marginal scales simple, in a single series. Sternum slender, cross-like, acute at each end, centre coriaceous; sternal plates five pairs, very thin, skin-like, the narrow lateral prolongation of the sternum covered by a peculiar plate (perhaps the removed abdominal); gular plate small, united into a triangular plate; marginal plate regular, in a single series. Claws 5·4. America.

Chelydra, *Schweig. Mem. Kœnigsb.* (1812).
Fitz. Syst. Rept. 29 (1843).
Wiegm. & Ruthe, Handb. 166.
Chelonura, *Flem. Phil. Zool.* ii. 270 (1822).
Bell, Zool. Journ. iii. 515 (1828).
Holbrook, N. A. Herpet. i. 147.
Bonap. Obs. Cuv. R. A. 170.
Emys § *, *Gray, Ann. Phil.* x. 210 (1825).
Rapara, *Gray, Ann. Phil.* x, 210 (1828).
Emysaurus (Emysaure), *Dum. & Bib. Erp. Gén.* ii. 349; *Cat. Méth. R.* 15.
Emysaura, *Dum. & Bib. Erp. Gén.* ii. 350.
"Emydosaurus, *Dum. & Bib.*," *Gray* (misprint).
Le Saurochelya (Saurochelys), *Latr. Fam. Nat. R. A.*
Les Chelydes, *Cuv. R. A.* ii. 12; ed. 2. ii. 13.

1. **Chelydra serpentina.** The ALLIGATOR TERRAPEN.

Tail with a central series of compressed tubercles. Beards on neck and chin small. Shell oblong, depressed, centre impressed, doubly keeled, bluntly toothed behind. Younger: Shell three-keeled, hinder edge sharply toothed. —*Schoepff. Test.* t. 6.

Chelydra serpentina, *Schweig. Prod.* 293. 420.
Gray, Syn. Rept. 36.
Wagler, Amph. 136. t. 5. f. 46, 47.
C. Lacertina, *Schweig. Prod.* 293.
Fitz. Syst. Rept. 29.
Testudo serrata, *Penn.* (not *Shaw*) *Cat. Liverpool Mus.* i.
T. Serpentina, *Linn. Syst. Nat.* 351.
Schoepff. Test. t. 6 (young).
Daud. Rept. ii. 98. t. 20. f. 2.
Shaw, Zool. t. 19.
Emysaura serpentina, *Leconte, Ann. Lyc. N. Y.* iii. 127.
Dum. & Bib. Erp. Gén. ii. 350. t. 17. f. 1.
Testudo longicauda, *Shaw, Mus. Coll. Surg.*
Serrated Tortoise, *Penn. Arct. Zool. App.* 46.
Alligator Tarapin, *Southern States N. America.*
Loggerhead or Snapping Turtle, *Northern States N. Amer.*
Chelonura (serpentina), *Flem. Phil. Zool.* ii. 270 (1822).
Say, Journ. Acad. Philad. iv. 206.
Bonap. Obs. Cuv. R. A. 171 (1836).
Harlan, Amer. Herpet. 81.
Holbrook, N. A. Herpet. ed. 2. i. 139. t. 23.
De Kay, Rept. N. York, 8. t. 3. f. 6.
Rapara serpentaria, *Gray, Bonap. l. c.*
Emysaurus serpentina, *Dum. & Bib. Cat. Méth.* 2. 15.

Hab. North America, from New England to Florida.

a. Young animal (stuffed). North America. Presented by Gen. Hardwicke.

b. Adult (stuffed). North America.

c. Young (in spirits). New Orleans. M. Sallé's Collection.

d. Half-grown (stuffed). North America.

e. Adult (stuffed). North America. Mr. Argent's Collection.

h & *i.* Half-grown (stuffed). North America; Louisiana. Mr. Smith's Collection.

OSTEOLOGY. TAB. XXXVIII. fig. 1, TAB. XL. fig. 2, skull (half-grown).

Tortue serpentine, *Cuv. Oss. Foss.* v. 185, skull.

f. Skull (half-grown). North America. Presented by the Zoological Society.

g. Skeleton (young). North America. M. Parzudaki's Collection.

"This species is very voracious in its habits, and destroys great quantities of fish; it is also more ferocious than any other, and will seize with violence at anything presented to it, and not let go its hold even when the head is separated from the body. The wound inflicted by its bite is very severe. It is much sought after as an article of food: when old the flesh is musky."—*Leconte.*

18. MACROCLEMYS.

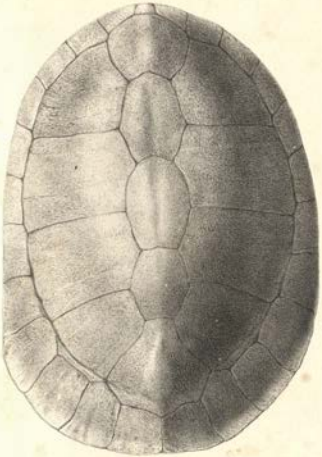
Head very large, covered with numerous symmetrical, smooth, horny plates; chin two-bearded. Neck thick, with large beards, horny at the tip. Tail conical, with a central series of compressed tubercles. Claws 5·4, strong. Back convex, three-keeled, toothed behind. Marginal plates 31, produced, subtubercular, those on the centre of each side in a double series. Skull: nose produced in front; palate deeply concave. Sternum slender, cross-like, acute at each

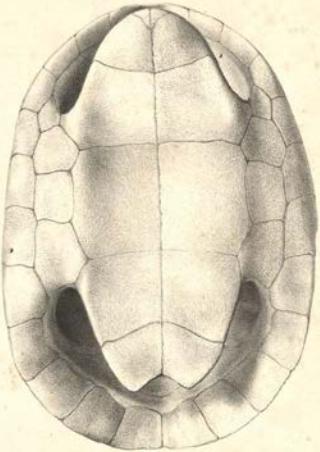
CHELYDRA SERPENTINA

MACROCHELYS TEMMINCKII

MACROCHELYS TEMMINCKII.

1.MACROCHELYS TEMMINCKII 2.CHELYDRA SERPENTINA





DERMATEMYS MAWII

end; sternal plates six pair, thin; the narrow lateral prolongations of the sternum covered with a peculiar plate, and often having some additional ones between it and the sternal plates on the inner and marginal plates on the outer side; gular and anal plates small, generally united, triangular.

1. Macroclemys Temminckii. Temminck's Snapper.

Carapace strongly three-keeled, rounded, deeply serrated behind.

Emys Lacertina, *Dum. & Bib. MSS.*
Chelonura Temminckii, *Troost, MSS., in Holbrook, N. A. Herpet.* i. 147. t. 24.
Emysaurus Temminckii, *Dum. Cat. Rept. Mus. H. N.* 16.

Hab. North America.

a. Adult. North America (Mississippi). From the Zoological Society.

b. Adult. North America (Mississippi). Mr. Smith's Collection.

c. Adult (stuffed). Very large. North America; Louisiana. Mr. Smith's Collection.

Osteology. Tab. XXXVIII. fig. 2; Tab. XXXIX.; Tab. XL. fig. 1, skull (adult).

d. Skeleton. North America. Presented by John Dillon, jun., Esq.

b. Sternum broad, truncated before; sternal plates 12; sterno-costal suture covered with three or four additional plates, and with the ends of the pectoral and abdominal plates.

Emydidæ § B. *a. Gray, Cat. Tort. B.M.* 13.

19. PLATYSTERNON.

Head very large, covered with a thick hard horny case; jaws very strong. Neck very thick, short, subretractile, with small granular scales. Limbs very large, contractile, not capable of being retracted into the shell, covered with long lunate scales in front, and fringed on the outer hinder sides. Toes 5·4, webbed to the claws; claws very strong. Tail elongate, cylindrical. Shell depressed, expanded, thin, covered with thin horny shields. Sternum flat, broad, truncated in front and behind, united to the thorax by a bony symphysis, covered with the ends of the pectoral and abdominal plates, and three small additional shields between them and the marginal plates. Axillary and inguinal plates small or none. Sternal shields 12; gular pair very short, broad, band-like. Asia.

Platysternon, *Gray, Proc. Zool. Soc.* 1831, 106; *Cat. Tort. B.M.* 35 (1844).
Dum. & Bib. Erp. Gén. ii. 345; *Cat. Méth. R.* 15.
Schlegel, F. Japon. 49.
Clemmys (Platysternon), *Fitz. Syst. Rept.* 29.

1. Platysternon megacephalum. The Helmeted Terrapen.

Deep brown, edge of the shields grooved and slightly radiately striated. Head brown-rayed; cheeks pale spotted; sternum pale yellowish.

Platysternon megacephalum, *Gray, Proc. Zool. Soc.* 1831, 106; *Illust. Ind. Zool.* t.
Dum. & Bib. Erp. Gén. ii. 345. t. 16. f. 2; *Cat. Méth. R.* 15.
Schlegel, F. Japon. 49.
Clemmys (Platysternon) megacephalum, *Fitz. Syst. Rept.* 29.

Hab. China.

a. Stuffed (half-grown). China. Presented by J. R. Reeves, Esq. (Figured *Illust. Ind. Zool.* t.)

b. Stuffed (adult). China. Gardens of the Zoological Society.

20. DERMATEMYS.

Head —— ? Toes —— ? Claws —— ? Shell oblong, convex, not keeled, sides rounded; hinder edge expanded, slightly reflexed, covered with very thin membranaceous shields; hinder marginal shield broad. Sternum flat, rounded in front, notched behind; the gular plates small, triangular, united to the upper shell by a bony symphysis, covered with the end of the pectoral and abdominal plates; the sterno-costal sutures covered with four moderate-sized distinctly defined plates; the anterior small, and two hinder largest. The axillary and inguinal plates none. The cavity of the shell is scarcely contracted at the opening. South America.

Dermatemys, *Gray, Ann. & Mag. Nat. Hist.* 1847, 60; *Proc. Zool. Soc.* 1847, 55.
Wiegm. Arch. 1848, 197.

1. Dermatemys Mawii. Mawe's Dermatemys.

Tab. XXI.

First vertebral plate seven-sided; second, third and fourth longer than broad. Shell pale brown, upper surface covered with small close irregular depressions of a darker brown colour; shields pale, nearly transparent, very brittle

when dry; under surface uniform pale yellowish-white, with slightly sunken grooves.

"Emys Mawii, *Bibron*," *Fraser's Cat. Mus. Zool. Soc.* no. 6899.

Dermatemys Mawii; *Gray, Ann. & Mag. Nat. Hist.* 1847, 60; *Proc. Zool. Soc.* 1847, 36.
Wiegm. Arch. 1848, 167.

Emys Berardii, *Dum. & Bib. MSS.*
Dum. Cat. Mus. Hist. Nat. ii. no. 9* (1851).

Hab. South America (*Lieut. Mawe*).

a. Shell: length 17; width 11. Sternum: length 12½ inches. From the Museum of the Zoological Society.

The specimen, which is not quite full-grown, has much the external appearance of *Phrynops Geoffroyii*, and the general thinness of the scales of the *Chelydidæ*; but there is no appearance of any scar on the inner surface of the sternum for the attachment of the pelvis, and though the gular scale is worn and nearly obliterated, yet it is sufficiently distinct to show that it has no intergular plate.

Emys Berardii of Duméril's *Catalogue of the Paris Museum* is perhaps intended for this species. It is thus described:—

"Shell yellow-brown, irregular, rugose, with a multitude of small vermiculations; elongate, suboval, narrowed above the fore-legs, rather sinuous behind; hinder part of back slightly keeled; nuchal small, short; first vertebral produced in front. Chest yellow, entire in front, notched behind. Head uniform brown, flat, broad, rather large; jaws toothed. Toes broad-webbed. Tail strong, rather long.

"*Hab.* South America (*Mawe*); Vera Cruz (*Berard*)."

This is more likely to be the case, as Mr. Fraser's note, in the *Catalogue of the Museum of the Zoological Society*, shows that M. Bibron must have examined it, and these authors give the habitat as "South America (*Mawe*)," in their account of the species. If this be the case, M. Bibron must have changed the name after his return to Paris.

Fam. III. CHELYDIDÆ (CHELIDES).

Head much depressed, broad, covered with a soft skin or hard shields; nostrils elongate, tubular; eyes superior; jaws horny. Neck long, broad, contractile, bent under the side of the shell in repose. Feet webbed. Toes 5·5, deeply webbed, with a lobe between each claw. Claws 5·5, 5·4, or 4·4, elongate, acute. Shell depressed, covered with horny shields; caudal pair always separate. Sternum attached to the thorax by a short bony suture, covered with the outer ends of the pectoral and abdominal plates, and with an additional intergular plate in front. The axillary and inguinal plates very small or none. Pelvis large, united to the vertebra and the hinder lobe of the sternum, leaving a scar. Living in ponds and rivers, in warm climates. Eating flesh; feeding only in the water: swimming with their whole shell under water.

Emys § ***, *Gray, Ann. Phil.* x. 211 (1825), and *note.*
Chelidina, *Gray, Ann. Phil.* x. 211 (1825).
Emydæ (part.), *Swainson, Lard. Cyclop.* 344.
Cheldridæ (part.), *Swainson, Lard. Cyclop.* 343.
Hydraspides, *Fitz. Syst. Rept.* 29 (1843).
Chelydæ, *Wiegmann, Herp. Mex.*
Fitz. Syst. Rept. 30 (1843).
Phyllopodochelones (part.), *Ritzen, Nov. Act. Nat. Cur.* xiv. 269 (1828).
Chersydrochelones (part.), *Ritzen, l. c.* 269.
Amydæ (part.), *Ritzen, l. c.* 269.
Hydraspidina, *Bonap. Tab. Analit.* 8 (1836).
Chelina, *Bonap. Tab. Analit.* 8 (1836).
Terrapene (part.), *Bonap. Saggio Anim. Vert.* 12 (1832).
Chelydæ, *Wiegm. & Ruthe, Handb.* 169.
Chelydoides & Emydoides (part.), *Fitz. Neue Class.* (1826).
Emys, sp., *Boongn.* (1803).
Oppel, Rept. (1811).
Merrem, Tent. 23.
Cuv. R. A. (1817).
Testudines steganopodes (part.), *Wagler, Syst.* 133.
Testudinida chelina and T. testudinina (part.), *Bonap. Saggio Anim. Vert.* 13 (1832).
Tortues paludines ou Cheloniens Elodites, § 2. Pleuroderes, *Dum. & Bib. Erp. Gén.* ii. 374; *Cat. Méth. R.* 17.

In the *Annals of Philosophy* for 1825, I formed a section of *Emys* (***) for *Emys longicollis*—"Toes 4·4; sternum thirteen-scaled,"—and remarked: "The plastron of the last subgenus is covered with thirteen scales, that is, six pair marginal, and an unequal-sided hexagonal one in the middle of the anterior lobe." I have only observed an approximating distribution of the plates in a species of *Sternotherus*; all the other *Emydæ* that I have seen have had only the six pair of marginal plates, the first pair sometimes soldered so as to form only eleven plates.

Mr. Bell, after stating that the same number of sternal plates exists in *Sternotherus Leachianus* and the two species of *Chelys* (see *Zool. Journ.* iii. 512, 1838), overlooked the other anatomical characters which unite these genera, and made no proposal to unite them into a natural group.

Duméril and Bibron in their large work merely change the name of the family as given in my Synopsis.

SYNOPSIS OF THE GENERA.

A. *Head moderate, depressed. Beaks naked. Intergular plate marginal.*

a. *Claws 5·5. Head shielded.*

1. Sternothærus. Front lobe of the sternum mobile, with a long internal process on each side.
2. Pelomedusa. Front lobe of the sternum fixed.

b. *Claws 5·4. Head with a thin skin, or subshielded.*

3. Platemys. Head covered with a continuous skin; neck warty on the sides. Shell depressed, light, sides revolute.
4. Hydraspis. Head with many small shields. Shell depressed, thin, light, sides revolute; cavity not contracted.
5. Chelymys. Head with many small shields. Shell convex, very solid, strengthened with two compressed diverging bony folds in front, sides revolute.

B. *Head large or very large.*

c. *Claws 5·4. Head flat, depressed; beaks naked; chin not bearded.*

6. Cheloding. Intergular plate within the margin; nuchal plate small on the margin. Jaws naked.
7. Hydromedusa. Intergular plate on the margin; nuchal plate large, like the vertebral, and within the margin. Jaws warty at the angles.

d. *Claws 5·4. Head flat, much depressed; beaks covered with fleshy lips; chin bearded; intergular plate marginal.*

8. Cholys. Shell depressed, three-keeled.

e. *Claws 5·4. Head convex, rounded, covered with hard shields; beaks naked.*

9. Peltocephalus. Head subquadrangular; upper jaw hooked. Feet slightly webbed.
10. Podocnemis. Head subdepressed, with a groove in front; upper jaw slightly arched. Feet broadly webbed.

A. *Head moderate, depressed. Beaks naked. Intergular plate marginal, between the gular pair.*

a. *Claws 5·5. Head shielded.*

Chelydidæ A. *a, Gray, Cat. Tort. B.M.* 36 (1844).

1. STERNOTHÆRUS.

Shell roundish, rather convex, side plates narrow, front one very short and square. Nuchal plate none. Sternum broad, front lobe rounded before, moveable, and furnished on each side of its hinder edge with an internal bony process, covered by the gular, humeral and pectoral plates; central lobe only covered by the abdominal plates; hinder lobe bifid, with an internal scar. Intergular plate marginal, between the gular. Beaks naked. Toes short, strong, shielded above, shortly webbed. Claws 5·5, strong, sharp.

Sternothærus, *Bell, Zool. Journ.* ii. 514.
Stergothærus, *Gray, Syn. Rept.* (18); *Cat. Tort. B.M.* 36.
Dum. & Bib. Erp. Gén. ii. 397; *Cat. Méth. R.* 19 (not *Fitzinger*).
Pelusios, *Wagler, Syst.* 137 (1830).
Fitz. Syst. Rept. 29.
Sternotherus and Terrapene, sp., *Bell, Zool. Journ.* ii. 305.
Terrapene, sp., *Merrem, Tent.*
Kinosternon §, *Bonap. Saggio Anim. Vert.* 12.

The genus *Sternothærus* of Mr. Bell (*Zool. Journ.* ii. 305) is exactly synonymous with one of Daudin's sections of the *Tortues à boîtes*, and contains species of the genera *Cistudo, Kinosternon*, and the present genus, *Sternothærus*.

Mr. Bell, in his second paper (*Zool. Journ.* iii. 515), gives as the type *S. Leachianus*, which is the same as *Terrapene nigricans* of his former paper (*Zool. Journ.* ii. 305);—placing the genus with the other Box Tortoises in *Emydidæ*, between *Terrapene* (*clausa*) and *Kinosternon*.

In my *Synopsis of Reptiles* I defined the genus so as to confine it to the species similar to that type; and Duméril and Bibron, in their work, adopted my views. Wagler uses *Pelusios* for the same group.

Wagler (*Syst. Rept.*) quotes Mr. Bell's first species, *S. trifasciatus*, as the type of his genus.

* *"Muzzle elongated, conical; upper jaw hooked."*—Duméril.

1. Sternothærus niger. The BLACK STERNOTHÆRUS.

Shell oval, short, swollen, narrower in front, deep black; muzzle elongate; upper jaw hooked, covering the lower. Head elongate, with two large parietal, a long fronto-nasal, and a moderate frontal shield; upper jaws hooked.

Sternotherus niger, *Dum. & Bib. Erp. Gén.* ii. 397; *Cat. Méth. R.* 19.
Gray, Cat. Tort. B.M. 37.

Hab. Madagascar? Mus. Paris.

In the text, MM. Duméril and Bibron refer their figure t. 20, f. 1, to this species; but on the plates and in the explanation of the plates they name it *S. castaneus*, and it agrees with the latter in having a short head.

** *Muzzle short, rounded.*

2. Sternothærus subniger. The BLACKISH STERNOTHÆRUS.

Vertebral plates square, as long as broad, the fourth

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broader than long; two anterior marginal plates narrower than the first vertebral; sides of the hinder lobes of the sternum contracted in front; muzzle rounded. Jaws pale yellowish.

Sternotherus subniger, *Gray, Syn.* 38; *Cat. Tort. B.M.* 37.
La Tortue noirâtre, *Lacép. Q. O.* i. 175. t. 13.
Testudo subniger, *Lacép. by Bechst.* i. 260.
Latr. Rept. i. 89. t. 1.
Daud. Rept. ii. 197.
Terrapene nigricans, *Merrem, Tent.* 28.
Sternotherus nigricans, *Dum. & Bib. Erp. Gén.* ii. 399; *Cat. Méth. R.* 19.
Emys Couro, var., *Schlegel, Faun. Japon.* 64.
Pelusios subniger, *Wagler, Syst.* 137.
Fitz. Syst. Rept. 29.
Emys subniger, *Schweig. Prod.* i. 315, 438.

Hab. Africa; Madagascar.

a. Adult animal (dry); shell worn. Africa.

b. Adult (stuffed); shields slightly grooved. Madagascar. From the Paris Museum.

c. Half-grown (in spirits); lost its dorsal shields; shell short, rounded and convex.

3. Sternotherus castaneus. The Natal Sternotherus.

Vertebral plates broad, nearly square, nearly as long as broad, the fourth six-sided, longer than broad. Jaws pale yellow. Sides of the hinder lobes of the sternum straight.

Sternotherus castaneus, *Gray, Syn. Rept.* 38; *Cat. Tort. B.M.* 37.
Dum. & Bib. Erp. Gén. ii. 401. t. 20. f. 1; *Cat. Méth. R.* 19.
Emys castanea, *Schweig. Prod.* 324. no. 38.
E. Couro, var., *Schlegel, Faun. Japon.* 64.
Testudo subnigra β, *Daud. Rept.* ii. 198.
Sternotherus Leachianus, *Bell, Zool. Journ.* ii. t. 14 (young?).
S. sinuatus, *A. Smith, Illust. Zool. S. Africa,* t. 1.
Pelusios castaneus, *Wagler, Syst.* 137.

Hab. South Africa; Madagascar (*Quoy*).

a, b. Adult (stuffed). Two anterior marginal plates narrower than the first vertebral. Sternum of (*a*) flat, of (*b*) concave. Port Natal. From Dr. Krauss's Collection.

Osteology:—

c. Adult shell. Vertebral plate bluntly keeled; two anterior marginal plates nearly as broad as the first vertebral: Sierra Leone?

The figure above cited of *Sternotherus sinuatus* of Dr. A. Smith is very like specimen "*c*," but the first vertebral plate is broader and not so long.

4. Sternotherus Derbianus. Lord Derby's Sternotherus. Tab. XXII.

Shell oblong, convex, rounded; vertebral shields narrow, six-sided, much longer than broad, the last subtriangular. Head broad, the parietal and crown plates united into one; muzzle bluntly rounded; the sternum broad, with the hinder portion scarcely contracted in front, the front much rounded; the central gular plate broad ovate, angular behind; two anterior marginal shields as wide as the front vertebral. Jaws dark-lined.

Sternotherus Derbianus, *Gray, Cat. Tort. B.M.* 37.

Hab. West Africa.

a. Adult (stuffed). Vertebral plates elongate, very narrow, half as long again as broad. West Africa; Gambia. Presented by the Earl of Derby.

Osteology:—

b. Adult shell. Vertebral plates square, rather longer than broad. West Africa; Sierra Leone.

This species is separated from *S. castaneus* and *S. subniger*, by the shape of the vertebral plates, which in these species are broad, six-sided; in the *S. castaneus* they are nearly as broad as long, and in the *S. subniger* the third and fourth are broader than long, and the fourth is ovate and swollen behind. Perhaps they may all prove only to be varieties of the same species, or dependent on age.

5. Sternotherus Adansonii. Adanson's Sternotherus.

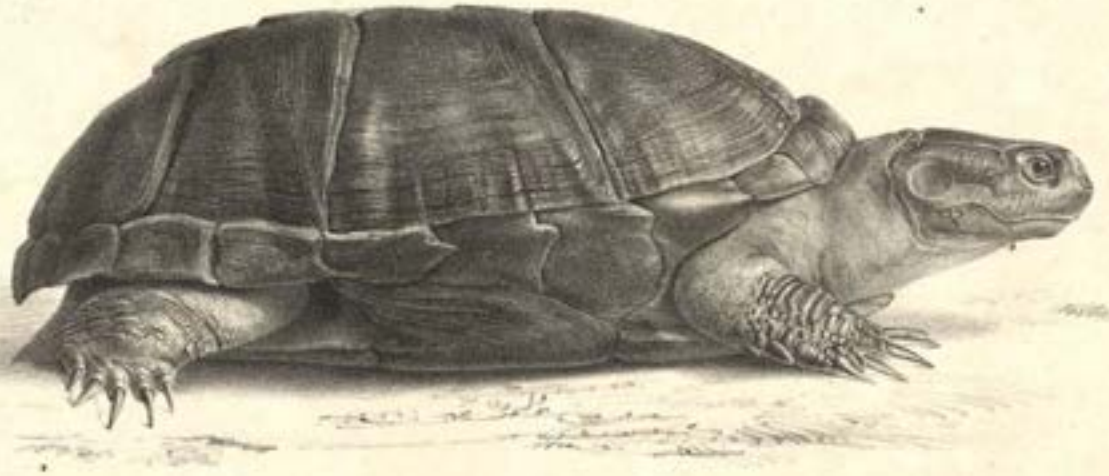
Shell oval, fulvous, brown-spotted, back strongly keeled; front vertebral plates much longer than broad. Sternum mobile in front, yellow, more or less varied with reddish-brown. Head flat, broad; tail short.

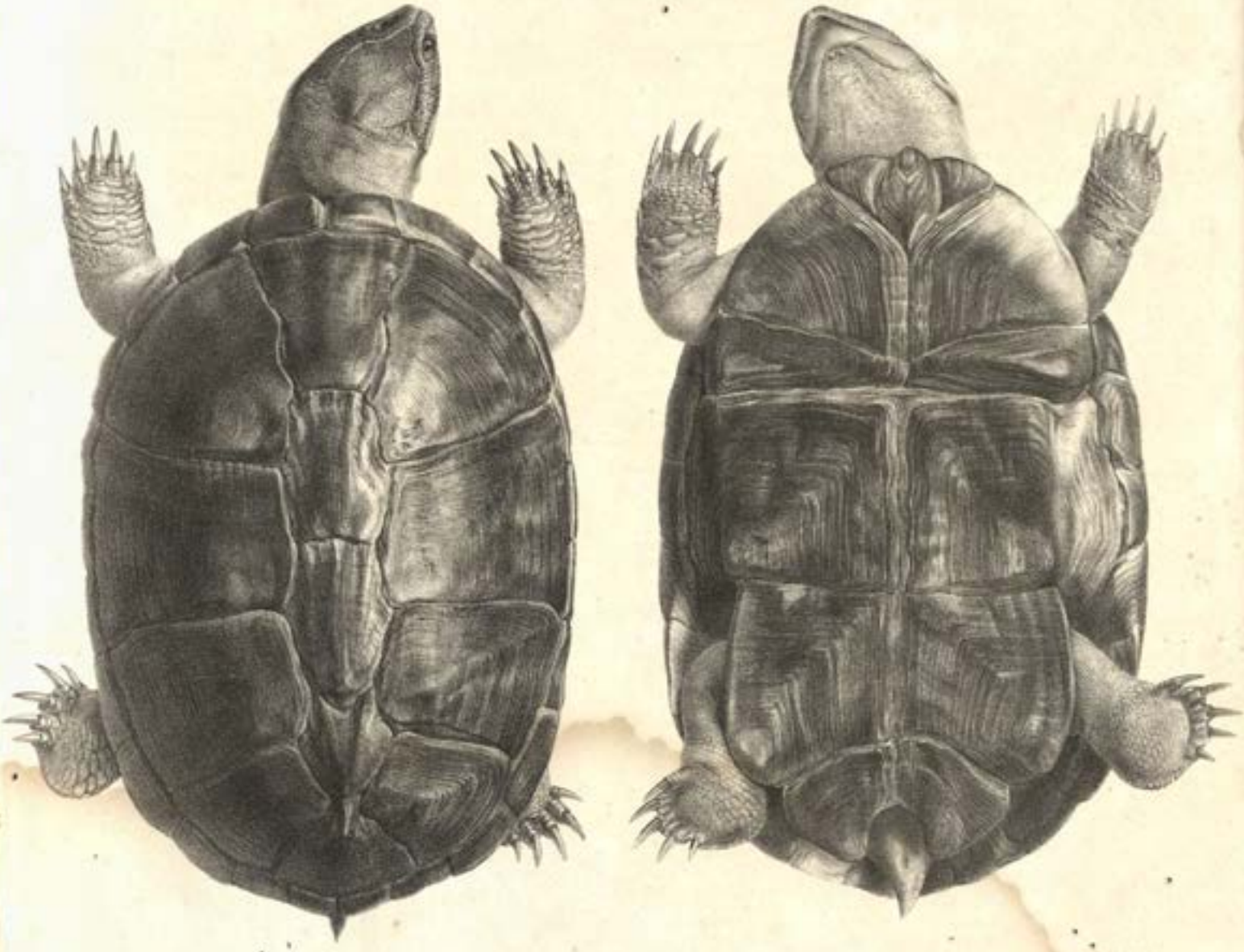
Pelomedusa? Adansonii, *Gray, Cat. Tort. B.M.* 38.
Emys Adansonii, *Schweig. Prod.* 308. 27.
Hydraspis Adansonii, *Gray, Syn.* 40.
Pentonyx Adansonii, *Dum. & Bib. Erp. Gén.* ii. 394.
Sternotherus Adansonii, *Dum. & Bib. Cat. Méth. R.* 19.

Hab. Cape de Verde; White Nile. Mus. Paris.

2. PELOMEDUSA.

Head much depressed, shielded with two narrow frontal shields, separated by a groove, a large vertebral shield, and a large cheek-shield on each side. Chin two-bearded. Beaks exposed. Neck broad. Legs with strong band-like shields in front, quite retractile. Toes short, strong, shielded above, webbed to the tips, with a large rounded lobe





STERNOTHERUS DERBIANUS

between each claw. Claws 5·5, elongate, sharp. Shell depressed, sides narrow, revolute. Nuchal none. Sternum solid, rather narrow, truncated in front, narrower and nicked behind. Intergular shield small; marginal; sterno-costal suture covered by the end of the pectoral and abdominal plates. Africa.

Pelomedusa, *Wagler, Syst.* 136 (1830).
Gray, Cat. Tort. B.M. 38.
Fitz. Syst. Rept. 29.
Pentonyx, *Rüppell, MSS. Mus. Frank.* (1831).
Dum. & Bib. Erp. Gén. ii. 390; *Cat. Méth. R.* 18.
Hydraspis (galeata), sp., *Bell, Zool. Journ.* iii. 515.

* *Pectoral shields small, short, triangular; humeral large; occiput with small shields.* Pentonyx.

1. Pelomedusa Gehafiæ. The GEHAFIA.

Olive; shields radiately and concentrically grooved; beneath pale yellowish-white, very slightly keeled; pectoral shields triangular, not reaching to the central line.

Pelomedusa Gehafiæ, *Gray, Cat. Tort. B.M.* 38.
Pentonyx Gehafiæ, *Rüppell, Mus. Frank.* (1831).
Dum. Cat. Méth. R. 18.
Hab, Abyssinia.

a. Adult (stuffed). Abyssinia. From Dr. Rüppell's Collection.

b. Young. Abyssinia. Dr. Rüppell's Collection.

** *Pectoral and humeral shields equal, oblong, four-sided, transverse; occiput largely shielded.* Pelomedusa.

2. Pelomedusa subrufa. The PELOMEDUSA.

Shell brown, olive, ovate oblong; first vertebral plate short, very broad in front.

Pelomedusa subrufa, *Gray, Cat. Tort. B.M.* 38.
Testudo subrufa (La Roussâtre), *Lacep. Q. O.* i. 173. t. 12; *Ency. Méth.* t. 6. f. 3.
Testudo subrufa, *Latr. Rept.* i. 120.
Daud. Rept. ii. 132.
Emys subrufa, *Schweig. Prod.* 308. 26.
Hydraspis subrufa, *Gray, Syn.* 40.
Testudo scabra, *Retz.*
T. badia, *Donnd. Zool. Beytr.* iii. 34.
T. galeata, *Schoepff. Test.* 12. t. 3. f. 1 (young).
Latr. Rept. i. 152.
Shaw, Zool. iii. 57. t. 12. f. 3.
Daud. Rept. ii. 136.
Emys galeata, *Schweig. Prod.* 307. no. 25.
Schlegel, Faun. Japon. 44.
Wagler, Syst. 132. t. 2. f. 36, 44.
E. olivacea, *Schweig. Prod.* 307. 24 (young).
Pentonyx capensis, *Dum. & Bib. Erp. Gén.* ii. 390. t. 19. f. 21; *Cat. Méth. R.* 18.
Testudo senegalensis, *Daud. Rept.*
Pelomedusa galeata, *Wagler, Syst.* 136 (1830), t. 2. f. 36, 37.
Fitz. Syst. Rept. 29.
Hab. Africa; Cape of Good Hope; Madagascar; Senegal.

Var. 1. Shields smooth, or with only a few concentric annular grooves.

a. Adult (stuffed). Plates worn smooth. Cape of Good Hope. Presented by Dr. J. E. Gray.

b. Young (dry); only two legs. Shields slightly concentrically grooved. Cape of Good Hope.

c, d, e. Very young (dry, from spirits). Shields smooth, slightly concentrically grooved. Cape of Good Hope. Presented by J. S. Bowerbank, Esq.

h. Young (in spirits). South Africa. Mr. Bartlett's Collection.

i & j. Young (in spirits). South Africa. From the Zoological Society.

k. Adult (stuffed). South Africa.

Var. 2. Black, grey-black spotted; shields all with close, rather granular, radiating ridges and concentric grooves; areola small.

g. Adult (stuffed). Black; areola small. South Africa; Cape of Good Hope. Mr. Warwick's Collection.

f. Young (stuffed); wanting sternum. South Africa. Presented by J. S. Bowerbank, Esq.

OSTEOLOGY:—
Pelomedusa galeata, *Wagler, Syst.* t. 2. f. 38–44.

Young, when alive, pale olive-green.

*** *Doubtful species.*

3. PELOMEDUSA MOZAMBICA, *Peters, MSS.* (1848).
Hab. Mozambique (*Mus. Bertin*).

4. PENTONYX AMERICANA, *Cornalia, Verteb. Syn. in Mus. Mediolanensi*, 13 (1849).

Testa oblonga, in medio coarctata, minime carinata, scutis distinctis olivaceo-brunneis flavo-maculatis tribus lineis castaneis circumdatis.

Hab. New York (?).

b. *Claws* 5·4. *Head covered with a thin skin, entire, or divided into small flexible shields.*

Chelydidæ A. *b, Gray, Cat. Tort. B.M.* 36.

3. PLATEMYS.

Head moderate, flat, covered with a continuous thin skin. Temple with small scales. Beaks naked, weak. Chin two-

bearded. Neck warty on the sides. Hind legs with a series of three or four large compressed scales, forming a large compressed lobe on the outer edge. Legs with large hexagonal scales in front. Toes strong, with a few broad shields above, webbed. Claws 5 : 4, acute. Shell oblong, depressed, flattened above, lateral margin revolute. Nuchal plate distinct; anterior vertebral plates broad, large. Sternum solid, not mobile, rounded in front, deeply notched behind. Tropical America.

Platemys, *Wagler, Syst.* 135 (1835).
Platemys, sp., *Dum. & Bib. Erp. Gén.* ii. 407; *Cat. Méth. R.* 20.
Gray, Cat. Tort. B.M. 41.

1. Platemys planiceps. The Doubly-keeled Platemys.

Shell quadrangular, fulvous, marked on each side of the disk with a large black spot; back with two rounded keels, separated by a broad groove; costal plates not arched; sternum black, yellow-edged; margin yellow, with triangular brown spots. Head covered with a thin single plate; crown yellow.

Hydraspis planiceps, *Gray, Syn. Rept.* 40; *Cat. Tort. B.M.* 39.
Testudo planiceps seu platycephala, *Schneid. Berl. Naturf.* iv. t. 16.
Schœpff. Test. 115. t. 27.
Emys planiceps, *Schweig. Prod.* 303. no. 16.
Platemys planiceps, *Wagler, Syst.* 135.
Fitz. Syst. Rept. 29.
E. platycephala, *Schlegel, Faun. Japon.* 45.
Testudo Martinella, *Daud. Rept.* viii. 344.
Platemys Martinella, *Dum. & Bib. Erp. Gén.* ii. 407; *Cat. Méth. R.* 20.
Emys canaliculata, *Spix, Bras.* t. 8. f. 1, 2.
Platemys canaliculata, *Wagler, Syst.* t. 4. f. 1, 2, 3.
? Emys discolor, *Thunb. MS. Schweig.*
? E. Schœpffii, *Wiegmann.*

Hab. Brazils; Cayenne; Surinam.

a. Adult (in spirits); lost part of the shields. Guiana.

b. Adult (in spirits); lost many of the shields. British Guiana. Mr. Schomburgk's Collection.

c. Adult (stuffed). Rio Negro; Brazils. Mr. Bates's Collection.

Osteology:—

Platemys canaliculata, *Wagler, Syst.* t. 4. f. 4–26.

M. Schlegel regards *Emys nasuta*, *E. Geoffroyana*, Schweig., *E. stenops*, *E. depressa*, *E. canaliculata*, *E. ruffpes*, *E. viridis*, Spix, *E. Maximiliana*, *E. radiolata*, Mikan, *E. depressa*, Neuwied, and *E. pachyura*, Boie, as all synonyms of this species! Other naturalists regard them as belonging to more than one genus.

4. HYDRASPIS.

Head moderate, flattened, covered with a thin skin, divided into numerous subsymmetrical plates. Beaks naked, slender, weak. Chin two-bearded. Hind legs with a compressed scaly tubercle on the outer side, above the foot. Toes webbed. Claws 5 : 4, acute. Shell oblong, depressed, back flattish, lateral margin revolute. Nuchal plate distinct, anterior vertebral plate larger than the other, often very broad. Sternum solid, not mobile; lobes broad, the front one rounded. Tropical America.

Hydraspis, sp., *Bell, Zool. Journ.*
Hydraspis, *Gray, Cat. Tort. B.M.* 38 (1844).
Platemys, sp., *Dum. & Bib. Erp. Gén.* ii. 407; *Cat. Méth. R.* 20.
Rhinemys (part.), *Wagler, Syst.* 134 (1830).
Fitz. Syst. Rept. 29.
Chelodina, sp., *Fitzinger.*
Phrynops, *Gray, Cat. Tort. B.M.* 41.
Wagler, Syst. 135 (1830).
Fitz. Syst. Rept. 29.

† *Neck warty above. Lower part of the front of the hind legs with a compressed wart formed of two large compressed scales, with a group of five or six unequal scales on the lower side beneath them. The first vertebral plate wider than the others.*

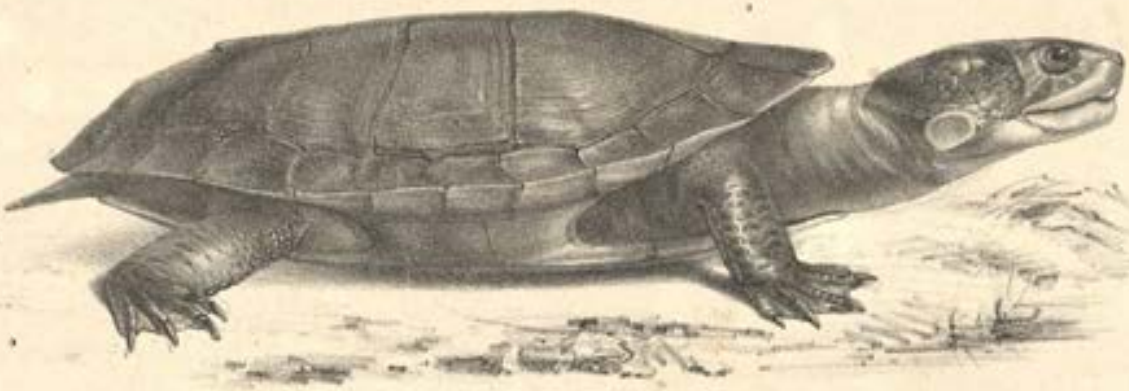
1. Hydraspis Spixii. The Grooved Hydraspis.

Shell oval oblong, convex, middle of the back flattened, with a narrow central groove; costal plates arched; sternum black. Head with numerous small plates; chin two-bearded; neck with conical acute spines; the two outer toes of the fore-feet small, with short rudimentary claws; the lower part of the outer side of the front edge of the hind legs with a compressed tubercle, formed of two compressed scales.

Hydraspis Spixii, *Gray, Cat. Tort. B.M.* 38.
Platemys Spixii, *Dum. & Bib. Erp. Gén.* ii. 409; *Cat. Méth. R.* 20.
Emys depressa, *Spix, Bras.* 4. t. 3. f. 2 (not *Neuwied*).
Gray, Proc. Zool. Soc. 1855; *Ann. & Mag. N. H.* 1855, xv. 69.
Rhinemys nasuta, var., *Wagler, Syst.* 134.

Hab. Brazil.

a. Adult (in spirits). Brazils. From M. Clausen's Collection.



HYDRASPIS RANICEPS

†† *Neck nearly smooth. Lower part of hind legs rounded in front, and covered with five or six rather larger convex scales, the last keeled. First vertebral plate almost as wide as the others.* Rhinemys.

Rhinemys, part., *Wagler.*

Duméril and Bibron separate the species belonging to this section thus, showing the very slight characters which divide them:—

I. Back keeled the whole length.
  * Sternum reddish. 6. *H. rufipes.*
  ** Sternum brown, ends yellow. 4. *H. nasuta.*

II. Back interruptedly keeled.
  * Sternum black-spotted. 12. *H. St. Hilairii.*
  ** Sternum not spotted. 14. *H. Geoffroyana.*

III. Back keeled on the last three plates. 3. *H. gibba.*

IV. Back not keeled.
  * Discal shields concentrically and radiately striated. 9. *H. radiolata.*
  ** Discal shields longitudinally striated; sternum black, yellow-edged. 11. *H. Gaudichaudii.*
  *** Discal shields smooth.
    † Sternum yellow; thorax brown, uniform. 5. *H. Wagleri.*
    †† Sternum yellow; thorax brown, black-rayed. 8. *H. depressa.*
    ††† Sternum brown, yellow-edged. 7. *H. Miliusii.*

* *Animal one-coloured.*

2. Hydraspis raniceps. The Toad-headed Hydraspis. Tab. XXIII.

Shell oblong, depressed, middle of the back flat, margin very broad in front, narrow and bent up on the sides, broader and arched over the hind legs; first vertebral shield large, as wide as long; third and fourth narrow, longer than broad; fifth and fifth with an acute keel on the hinder edge. Sternum rather broad. Head very large; crown and temple covered with small shields; ears prominent; neck smooth; lower part of the outer edge of the hind leg with four larger scales, the last compressed, largest.

Hab. Brazils; Para.

a. Adult (stuffed). First vertebral plate nearly square, two last vertebral plates keeled. Brazils; Para. Mr. Bates's Collection.

Osteology:—

b. Adult (skeleton). First vertebral plate broader, considerably broader in front than behind; last vertebral plates not keeled. From Mus. Paris.

"Platemys Spixii." Mus. Paris.

This species is very like *H. gibba*, but the back is more depressed, the margin much wider; the head nearly double the size, compared with the size of the body; the scales on the margin of the hind legs larger and more equal-sized, and the scales of the head small, more numerous and more equal in size. See *Proc. Zool. Soc.* 1853.

3. Hydraspis gibba. The Black Hydraspis.

Shell black, ovoid, middle of the back convex; discal plates slightly striated, the last three vertebral plates tuberularly keeled behind; costals flat; sternum brown, varied with yellow on the edge. Head moderate, covered with many small symmetrical plates. The crown with five elongated shields, two in front and two behind, and one central; the two front shields produced in front nearly to the back edges of the orbits.

Hydraspis gibba, *Gray, Cat. Tort. B.M.* 40.
Emys gibba, *Schweig. Prod.* 299. no. 7.
Rhinemys gibba, *Wagler, Syst.* 135.
Platemys gibba, *Dum. & Bib. Erp. Gén.* ii. 416. t. 20. f. 2; *Cat. Méth. R.* 20.
Hydraspis cayennensis β, *Gray, Syn.* 42.

Hab. South America.

a. Adult (stuffed). The lower part of the outer edge of the hind-legs with three or four rather larger scales, the last much larger and keeled; caudal plates higher than long. "Madagascar?" From M. Parzudaski's Collection.

4. Hydraspis nasuta. Schweigger's Hydraspis.

Shell roundish oblong, much depressed, keeled, waved, fulvous, hinder edge yellow; sternum brown, sides and ends yellow. Head depressed; crown separated from the forehead by a straight line, with five nearly equal-sized shields, two in front and behind, and one in the centre between them.

Hydraspis nasuta, *Gray, Cat. Tort. B.M.* 40.
Emys nasuta, *Schweig. Prod.* 298. no. 4.
Platemys Schweiggerii, *Dum. & Bib. Erp. Gén.* ii. 435; *Cat. Méth. R.* 21.
Emys platycephala, var., *Schlegel, Faun. Japon.* 46.
Rhinemys nasuta, *Wagler, Syst.* 134.

Hab. South America. Mus. Paris (one specimen).

? *a.* Young (in spirits). Lower part of outer side of hinder legs with four or five convex scales. Tropical America.

The Museum specimen is very like what may be the young of *H. gibba*, but the head shields are different.

5. Hydraspis Wagleri. WAGLER'S HYDRASPIS.

Shell oval, much elongated, narrowed at each end, keelless, rounded in front and truncated behind, reddish-brown; shields smooth; the first vertebral protuberant, three-sided; sternum yellow. Head flat, smooth; temple with small scales.

Hydraspis Wagleri, *Gray, Cat. Tort. B.M.* 40.
Platemys Wagleri, *Dum. & Bib. Erp. Gén.* ii. 422; *Cat. Méth. R.* 20.

Hab. Brazil. Mus. Paris (one specimen).

6. Hydraspis rufipes. The RED-FOOTED HYDRASPIS.

Shell brown, oval, truncated in front, angular behind; back keeled; sternum narrower behind. Neck and members reddish, with an oblong red spot above the ear; head smooth, with one large frontal, three elongate occipital, and many small scales on the temples.

Emys rufipes, *Spix, Bras.* 7. t. 6. f. 1, 2.
Hydraspis rufipes, *Gray, Syn.* 41.
Platemys rufipes, *Dum. & Bib. Erp. Gén.* ii. 435; *Cat. Méth. R.* 21.
Emys platycephala, var., *Schlegel, Faun. Japon.* 46.
Rhinemys rufipes, *Wagler, Syst.* 134. t. 3. f. 43, 44, 45. *Fitz. Syst. Rept.* 29.
Phrynops rufipes, *Gray, Cat. Tort. B.M.* 41.

Hab. Brazils. Mus. Munich.

In Spix's figure of this species the superciliary plates are united to the frontal. It is very like our specimen of *H. nasuta*.

7. Hydraspis Miliusii. MILIUS'S HYDRASPIS.

Shell oval, narrow and rounded in front, obtusely angular behind, keelless, black-brown; shields smooth. Sternum brown, yellowish washed on the edge and middle line; abdominal plates large; head broad, thick, smooth; temple with small scales.

Platemys Miliusii, *Dum. et Bib. Erp. Gén.* ii. 431; *Cat. Méth. R.* 21.
Emys stenops, *Spix, Bras.* 12. t. 9. f. 3, 4 (very young?).
Emys platycephala, var., *Schlegel, Faun. Japon.* 47.
Rhinemys nasuta, jun., *Wagler, Syst.* 134.
Phrynops? Miliusii, *Gray, Cat. Tort. B.M.* 42.

Hab. Cayenne. Mus. Paris.

The figure of *Emys stenops* represents the crown and temples covered with small shields.

The last three species may be only varieties or different-aged specimens of *H. nasuta*.

*** Animal and shell banded or spotted.*

8. Hydraspis depressa. The DEPRESSED HYDRASPIS.

Shell oval-oblong, rounded at each end, not keeled, olive-brown, black-rayed, hinder margin yellow; blackish-grey, side of the head with three black rays; throat whitish, black-spotted. Sternum narrower behind than in front. Head covered with very small shields diverging from a small central vertical shield. Neck granular. The inner sides of the front of the hind legs with three or four convex slightly keeled scales, outer side with six small keeled shields.

Hydraspis depressa, *Gray, Syn.* 41; *Cat. Tort. B.M.* 39.
Emys depressa, *Merrem, Tent.* 22 (not *Spix*).
Neuwied, Beitr. Bras. i. 29; *Abbild.* t. *Schinz, Rept.* 43. t. 4.
Platemys Neuwiedii, *Dum. & Bib. Erp. Gén.* ii. 425; *Cat. Méth. R.* 20.
Emys Lyræ, *Reuse, Mus. Frankfort.*
E. platycephala, var., *Schlegel, Faun. Japon.* 47.
Rhinemys depressa, *Wagler, Syst.* 134.

Hab. South America; Brazils?

a. Young, in spirits. Sternum with many small spots. South America. Presented by Dr. Edward Rüppell.

b. Half-grown, in spirits. Sternum with fewer large spots. South America; British Guiana. Presented by Chevalier Schomburgk.

9. Hydraspis radiolata. The RAYED HYDRASPIS.

Shell oval-oblong, narrowed and rounded in front, rather obtusely angular behind, keelless, brown, varied with reddish; shields concentrically and radiately striated. Sternum broad before and behind. Head covered with numerous scales; neck tubercular.

Hydraspis radiolata, *Gray, Syn. Rept.* 44; *Cat. Tort. B.M.* 39.
Emys radiolata, *Mikan, Delect.* t.
Neuwied, Beitr. i. 39; *Abbild.* t.
Rhinemys radiolata, *Wagler, Syst.* 165.
Platemys radiolata, *Dum. & Bib. Erp. Gén.* ii. 412; *Cat. Méth. R.* 20.
Hydraspis planiceps, jun., *Gray, Syn. Rept.* 40.
Emys platycephala, var., *Schlegel, Faun. Japon.* 47.

Hab. Brazils. Mus. Bell.

Allied to *H. depressa*, but the sternum is represented as broader behind.

**** Species requiring further examination.*

10. Hydraspis Bellii. BELL'S HYDRASPIS.

Shell (young) very depressed, very obscurely keeled, brown; middle of the hinder edge of vertebral shield

rather elevated, margin very much expanded, deeply serrated behind; beneath, yellow brown-rayed and varied. Sternum narrow, rather broader in front, attenuated and deeply acutely lobed behind. Head brown, moderate, with two subtrigonal hard occipital shields, and small shields on the temples; chin two-bearded; neck warty, yellow beneath, with a yellow streak on each side, from the angle of the mouth and under the ear; claws elongate, acute, compressed.

Phrynops Bellii. *Gray, Cat. Tort. B.M.* 41.
Hab. ——? Mus. Bell: a young specimen.

11. Hydraspis Gaudichaudii. GAUDICHAUD'S HYDRASPIS.

Shell oval, oblong, truncated in front, rounded behind, keelless, brown marbled with black, and with yellow spots on the outer edge of each marginal shield. Sternum black in the middle, orange on the sides. Head large; under part of the neck orange, marbled with brown.

Hydraspis Gaudichaudii, *Gray, Cat. Tort. B.M.* 40.
Platemys Gaudichaudii, *Dum. & Bib. Erp. Gén.* ii. 427; *Cat. Méth. R.* 20.
Hab. Brazils. Mus. Paris (one very young specimen).

12. Hydraspis Hilairii. ST. HILAIRE'S HYDRASPIS.

Shell rather convex, pale brown, short, oval, narrowed at each end; shields smooth; vertebral broad, each furnished with a keel-like tubercle. Sternum yellow, black-spotted. Head depressed, subsquamose, muzzle short, round.

Hydraspis Hilairii, *Gray, Cat. Tort. B.M.* 40.
Platemys Hilairii, *Dum. & Bib. Erp. Gén.* ii. 429; *Cat. Méth. R.* 21.
Hab. Brazils. Mus. Paris.

13. Hydraspis affinis. The ALLIED HYDRASPIS.

Shell brown, obscurely black-rayed, margin strongly reflexed over the hinder feet; two last vertebral shields with an elevated compressed conical ridge. Neck long, black, with a yellow line on each side, beneath yellowish.

Hydraspis? affinis, *Gray, D. C.* 22. no. 10, ined.; *Cat. Tort. B.M.* 41.
Hab. Brazils. Mus. Berlin.

14. Hydraspis Geoffroyana. GEOFFROY'S HYDRASPIS.

Shell oval, oblong (of the same width at the two ends), rounded before, obtusely angular and nicked behind; vertebral plates forming a gutter on each side of the tubercular keel. Body yellowish, spotted and rayed with brown, beneath yellow. Head with small scales; occipital and superciliary shields elongated.

Hab. South America; Buenos Ayres. Mus. Paris, two specimens, young and old.

5. CHELYMYS.

Head and temple covered with a smooth skin. Beaks naked, horny, strong. Chin not bearded. Neck not warty. Shell convex, solid, expanded behind; side edges narrow, rather revolute; nuchal shield distinct; front cavity much contracted by two rather diverging septa, only leaving a space half the width of the outer opening; vertebral column sharply keeled within. Sternum solid, narrow, with broad and shelving side wings, and a broad rounded notch behind. Claws 5·4, acute. Australia.

Chelymys, *Gray, Cat. Tort. B.M.* 41 (1844).
Emydura, *Bonap. Tab. Analyt.* 8 (1836).
Platemys, sp., *Dum. & Bib. Erp. Gén.* ii. 438; *Cat. Méth. R.* 21.

1. Chelymys Macquaria. The VICTORIA CHELYMYS.

Shell ovate, convex, blackish-brown marbled with grey, and rather rugose above, with slightly impressed, narrow, netted grooves; beneath convex, yellow; vertebral plates nearly square, the fourth six-sided, elongate; the marginal plates rather narrow in front, broader and slightly bent upon the sides, dilated, rather produced, and leaving two or three notches over the tail behind.

Chelymys Macquaria, *Gray, Cat. Tort. B.M.* 42.
Emys Macquaria, *Cuv. R. A.* ii. 11.
Hydraspis Macquaria, *Gray, Syn.* 40.
Platemys Macquaria, *Dum. & Bib. Erp. Gén.* ii. 438; *Cat. Méth. R.* 21.
Grey, Trav. W. Austr. ii. 445.
Hydraspis Victoriæ, *Gray, Zool. Misc.* 55.
H. australis, *Gray in Grey, Trav. W. Austr.* ii. 445. t. 6.
Emydura Macquaria, *Bonap. Tab. Analyt.* 8 (1836).
Hab. Australia.

Var. 1. High, convex.
b. Half-grown (stuffed). Shields smooth; vertebral rather broader than long; hinder lateral marginal plates square. Australia. Presented by J. Gould, Esq.
Hydraspis australis, *Gray in Grey, Travels W. Austr.* ii. 445. t. 6.

OSTEOLOGY:—
a. Adult (shell only). Back with a very narrow, slightly sunk, interrupted vertebral line; shield partly rugose; vertebral plates rather longer than broad. Victoria

River, N.W. coast of Australia. Presented by Capt. William Chambers, R.N.

Emys Macquaria, *Dum. & Bib.*
Hydraspis Victoriæ, *Gray, Zool. Misc.* 55.

Var. 2. Shell depressed, lighter; hinder margin expanded; hinder lateral marginal plates broader than long; vertebral plates six-sided, broader than long.

c. Adult (stuffed). Australia. Presented by John Gould, Esq.

d. Adult (stuffed). Australia. Presented by Sir Thomas Mitchell.

OSTEOLOGY:—

e. Adult (shell only). Victoria River. Presented by Capt. William Chambers, R.N.

f. Adult (shell only). Rather deformed, more depressed, and shelving downward behind. Australia. Mr. Argent's Collection.

The two varieties, though so different in general appearance, are found together in the same river. Are they the sexes?

B. *Head large or very large.*

Chelydidæ B, *Gray, Cat. Tort. B.M.* 36.

c. Claws 5·4. *Head flat, depressed; beaks naked; chin not bearded.*

Chelydidæ B. *c, Gray, Cat. Tort. B.M.* 36.

6. CHELODINA.

Head elongate, covered with a skin divided into many small shields on the sides and temple. Neck very long, covered with a thin skin. Beaks naked. Chin not bearded. Legs strong, with a single series of very broad, thin, band-like shields. Toes strong, scaly above. Claws 4·4, acute, curved. Shell depressed, bread; shields thin, smooth. Sternum very broad, rounded in front, nicked behind. Intergular plate large, long, six-sided, placed in the angle between the gular and humeral plates. Nuchal plate distinct. Australia.

Emys § ***, *Gray, Ann. Phil.* x. 211 (1825).
Chelodina, *Gray, Cat. Tort. B.M.* 43 (1844).
Chelodina, sp., *Dum. & Bib. Erp. Gén.* ii. 443; *Cat. Méth. R.* 21.
Hydraspis, sp., *Bell, Zool. Journ.*
Hydraspis (Hydraspis), *Fitz. Syst. Rept.* 29.
Wagler, Syst. 134.
Hydraspis, *Bonap. Saggio Anim. Vert.* 13 (1832).

* *Shields very thin, closely netted with minute black lines.*

1. Chelodina longicollis. The YELLOW CHELODINE.

Shell oblong, depressed, brown; first vertebral shield elongate; the second and eleventh marginal shields with their front edge opposite the suture of the costal shields. Sternum flattish, deeply nicked behind, yellow; shields black-edged.

Chelodina longicollis, *Gray, Syn. R.* 39. t. 6. f. 2; *in Griffith, An. K.* t. ; *in Grey, Trav. Austr.* ii. 445; *Cat. Tort. B.M.* 43.
Testudo longicollis, *Shaw, N. Holl.* 19. t. 7; *Gen. Zool.* iii. 62. t. 6.
Lacép. Ann. Mus. iv. 189.
Emys longicollis, *Schweig. Prod.* 309. no. 28.
Schlegel, Faun. Japon. 43.
Hydraspis longicollis, *Bell, Zool. Journ.* iii. 512.
Wagler, Syst: 136, *note.*
Fitz. Syst. Rept. 29.
Emys (§ ***) longicollis, *Gray, Ann. Phil.* x. 211 (1825).
Chelodina Novæ Hollandiæ, *Dum. & Bib. Erp. Gén.* ii. 443. t. 21. f. 2; *Cat. Méth. R.* 21.
Emys porphyrea, *Daud. Rept.* ii. 142.

Hab. Australia; New Holland.

a. Adult animal (dry). Depressed, oblong. Australia. Presented by Sir Joseph Banks. The specimen described by Shaw, Schweigger, &c.

b. Adult (stuffed). More ovate and convex, 7 inches by 6; wants some plates. Australia. Presented by John Gould, Esq.

2. Chelodina oblonga. The OBLONG CHELODINE. TAB. XXIV.

Shell oblong, rather contracted in front, with a broad, impressed, vertebral groove, olive-brown, with irregular anastomosing lines, beneath yellowish; marginal plates longer than broad; second larger than the first or third, and rather angularly produced in the middle of the inner edge, which is opposite the suture of the costal plates. Sternum high, flat, strongly and sharply keeled on the sides; neck warty, very thick; pectoral plate longer than broad.

Chelodina oblonga, *Gray in Grey, Trav. Austr.* ii. 434, 445. t. 7; *Cat. Tort. B.M.* 43.

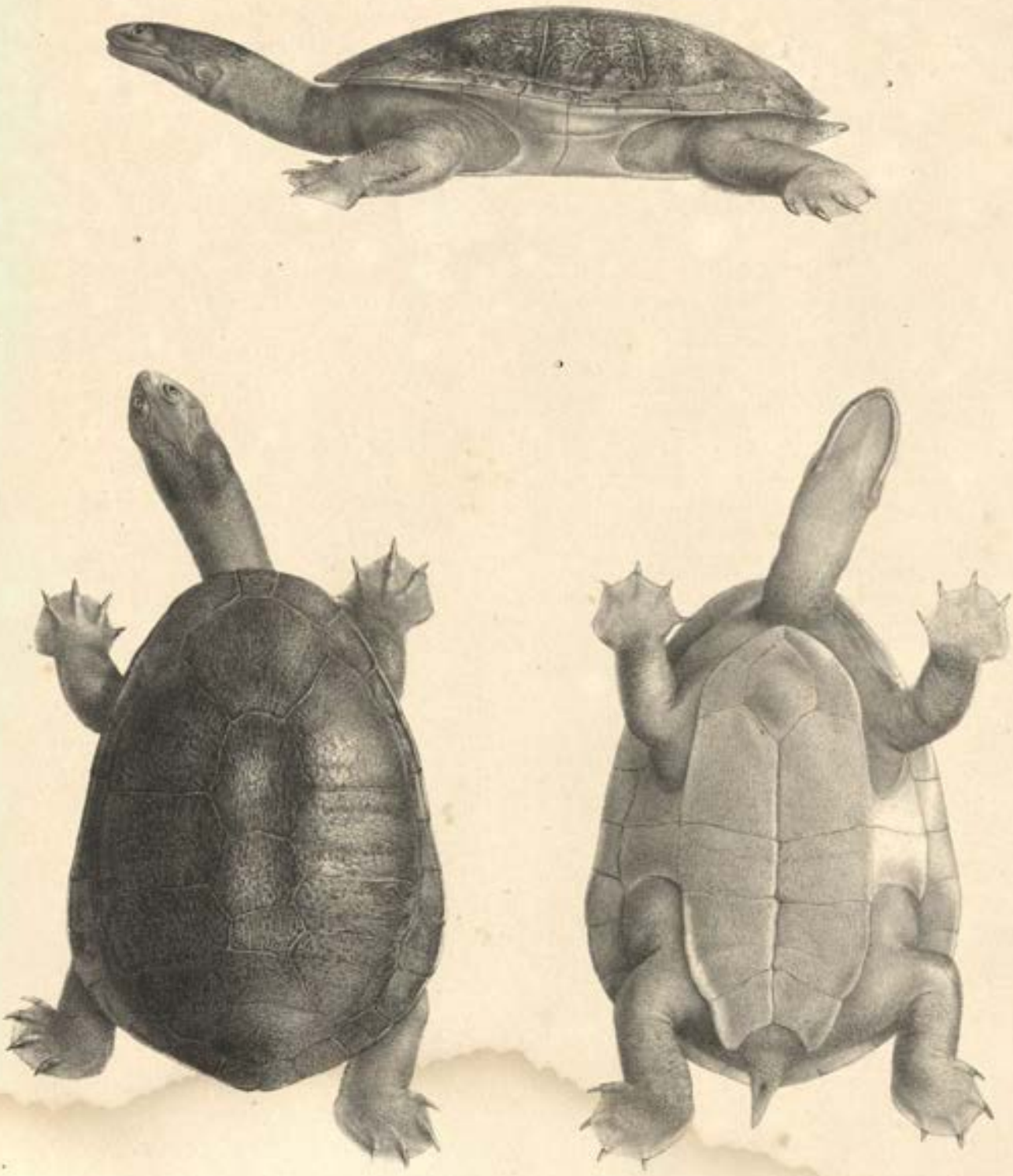
Hab. West and North Australia.

a. Adult (stuffed). West Australia. Presented by John Gould, Esq. The specimen figured in Sir George Grey's *Travels.*

b. Adult (stuffed). Port Essington. Presented by Capt. W. Chambers, R.N.

d. Adult (stuffed). Port Essington.

e. Adult (stuffed). North Australia. Mr. Argent's Collection.



CHELODINA OBLONGA

3. Chelodina Colliei. COLLIE'S CHELODINE.

Shell oblong, elongate, narrowed, revolute and contracted on the sides, dilated and bent up behind over the hind legs. Pale brown, varied and rayed with bright brown. Sternum narrow, keeled on the sides.

Chelodina Collici, *Gray, Proc. Zool. Soc.* 1855.

Hab. Swan River (*A. Collie, Esq.*).

a, ♂. Adult (stuffed). Swan River. From Haslar Hospital.

c. Very young (in spirits). Body scarcely larger than the head. Swan River. Presented by Sir John Richardson, M.D.

** *Shields hard, horny, rugose.*

4. Chelodina sulcifera. The GROOVED CHELODINE. TAB. XXV. fig. 2.

Shell oblong, rather depressed, dark brown; plates thin, concentrically grooved; vertebral plates convex, longer than broad; areola small, posterior; the sides rather reflexed, and rather dilated and bent up behind over the hind legs. Sternum brown; shield rather convex; sides sharply keeled; pectoral about as long as broad.

Chelodina sulcifera, *Gray, Proc. Zool. Soc.* 1855.

Hab. Australia.

a. Adult? (shell only). Australia. Mr. Warwick's Collection.

This species differs from *C. longicollis* in the thickness and grooved state of the plates, the small size of the areola, and the convexity and width of the vertebral plates.

7. HYDROMEDUSA.

Head elongate, depressed, covered with a soft dotted skin. Beaks narrow, exposed. Lips rather dilated and fleshy at the angle of the mouth. Chin not bearded. Neck warty. Claws 4·4; outer toe on each foot small, clawless. Tail elongate. Shell oblong, depressed, expanded in front, slightly revolute on the sides. Nuchal plate large, placed behind the front marginal plate, like a sixth vertebral; the second pair of marginal plates large, edging the nuchal plate. Intergular plate large, long, marginal. Tropical America.

Hydromedusa, *Wagler, Syst.* 135.
Fitz. Syst. Rept. 29.
Gray, Cat. Tort. B.M. 43 (1844).
Chelodina, *Fitz. Verz. Wien*, 45.
Chelodina (part.), *Dum. & Bib. Erp. Gén.* ii. 446 (1835); *Cat. Méth. R.* 21.

* *Back nodose behind.*

1. Hydromedusa Maximiliani. PRINCE MAXIMILIAN'S HYDROMEDUSA.

Shell oval, convex, entire, rounded in front, rather angular behind, pale brown, black-spotted; nuchal plate as broad as the first vertebral; the first vertebral longer than broad; the fourth costal and last two dorsal shields protuberant; forehead flat. Throat yellow, brown-marbled.

Hydromedusa Maximiliani, *Wagler, Syst.* 135. t. 3. f. 25, 26.
Gray, Cat. Tort. B.M. 44.
Fitz. Syst. Rept. 29.
Emys Maximiliani, *Mikan, Delect.* t.
Chelodina Maximiliani, *Fitz. Verz.* 48; *Dum. & Bib. Erp. Gén.* ii. 449; *Cat. Méth. R.* 21.
Hydraspis Maximiliani, *Gray, Syn.* 42.
Hab. Brazils.

a. Adult (stuffed). Third and fourth costal and fourth and fifth vertebral plates acutely tubercular. South America; Buenos Ayres. Dr. Miller's Collection, 1848.

Var. Fifth vertebral shield with cross ridge only; hinder costal plate less prominent.

b. Adult animal (dry). The nuchal or anterior vertebral plate transversely divided in half. (Lost one vertebral plate.)

"Brazils." From the French Museum; seat under the name of *Chelodina flavilabris*.

OSTEOLOGY:—
Peters in Müller, Arch. Anat. & Phys. 1839, t. 14.
Wagler, Syst. t. 3. f. 2–42.

c. Shell wanting some plates; vertebral plate tubercularly keeled; fifth with a broad transverse prominence; other shields smooth. La Plata.

** *Back with a central keel, rounded behind; shields grooved.*

2. Hydromedusa flavilabris. The YELLOW-LIPPED HYDROMEDUSA.

Shell elongate, depressed, oval, entire, rounded in front, rather angular behind; nuchal plate rather narrower than

the first vertebral; hinder discal plates flat; the first vertebral broader than long; second, third and fourth vertebrals bluntly keeled; forehead convex. Jaws bright yellow; neck with acute warts.

Hydromedusa flavilabris, *Gray, Cat. Tort. B.M.* 43.
Chelodina flavilabris, *Dum. & Bib. Erp. Gén.* ii. 446; *Cat. Méth. R.* 21.

Hab. Brazils.

a. Half-grown (in spirits). Shields nearly smooth. Brazils. From M. P. Clausen's Collection.

H. Maximiliani, jun., *Gray, Cat. Tort. B.M.* 44.

b. Young (in spirits). Shields concentrically grooved. Brazils. From M. P. Clausen's Collection.

c. Adult (stuffed; wanting head). The anterior vertebral plate small, quadrangular, narrow in front; second very large, broad in front, narrow behind, about as long as broad; the third, fourth and fifth vertebral plates bluntly keeled; the costal plates even, the first and third rather more convex than the others near the upper edge. South America. From the Zoological Society.

*** *Back not keeled, rounded behind.*

3. Hydromedusa depressa. The DEPRESSED HYDROMEDUSA. Tab. XXVI.

Shell oblong, depressed, dark brown, entire, rounded in front, rather angular behind; nuchal plate short, broader than the first vertebral; first vertebral square, as long as broad, with the front lateral angle produced. Sternum pale brown; gular plates short, subequal. Head grey; lips and beneath white; neck with small conical warts.

Hydromedusa subdepressa, *Gray, Proc. Zool. Soc.* 1853; *Ann. & Mag. Nat. Hist.* 1855, xv. 68.

Hab. Brazils.

a. Adult (in spirits). Some of the plates of the back and sternum divided into a number of small roundish shields. Brazils. Mr. Brandt's Collection.

d. *Claws* 5·4. *Head flat, much depressed; beaks covered with fleshy lips; chin bearded; intergular plate marginal.*

Chelydidæ B. *d*, *Gray, Cat. Tort. B.M.* 36 (1844).
Chelidina, *Gray, Ann. Phil.* x. 211 (1825).
Cheloneæ B (part.), *Flem. Phil. Zool.* ii. 271 (1822).
Chelydæ, *Wiegm. & Ruthe Handb.* 167.
Fitz. Syst. Rept. 30.
Steganopoda mandibularis, *Fitz. Syst. Rept.* 29.
Chelina, *Bonap. Saggio Anim. Vert.* 13 (1832); *Tab. Analyt.* 9 (1836).
Chelydoides, *Ritzinger, Neue Class.* 1826.

8. CHELYS.

Head flat, broad, fringed with warty appendages. Eyes small. Nose elongated into a tubular proboscis. Mouth roundish. Jaws covered with soft lips; lower jaw elevated behind. Tongue-bone very complicated (*Cuv. Oss. Foss.* v. t. 1). Neck thick, flat, long, bearded on each side. Legs scaly. Tail short, warty. Shell ovate, convex, broader before, acutely three-keeled, flattened in the middle of the back. Shields thin, angularly gibbous. Sternum narrow, broader and rounded in front, narrower and bifid behind. Intergular plate marginal. South America.

Chelys, *Daudin, Rept.* 1802.
Oppel, Rept. (1811).
Duméril, Zool. Anal. 77 (1805).
Gray, Ann. Phil. x. 211 (1825).
Flem. Phil. Zool. ii. 271 (1822).
Bell, Zool. Journ. iii. 515.
Wagler, Syst. 134.
Merrem, Tent. 24.
Fitz. Syst. Rept. 29.
Dum. & Bib. Erp. Gén. ii. 455; *Cat. Méth. R.* 21.
Matamata, *Merrem, Tent.* 21 (1820).
Ritzen, Nov. Act. Nat. Cur. xiv. 270.
Chelys (Chelides ou Tortues à gueule), *Cuv. R. A.* ii. 14.

1. Chelys Matamata. The MATAMATA.

Shell oblong; shields elevated, acute, forming three keels.

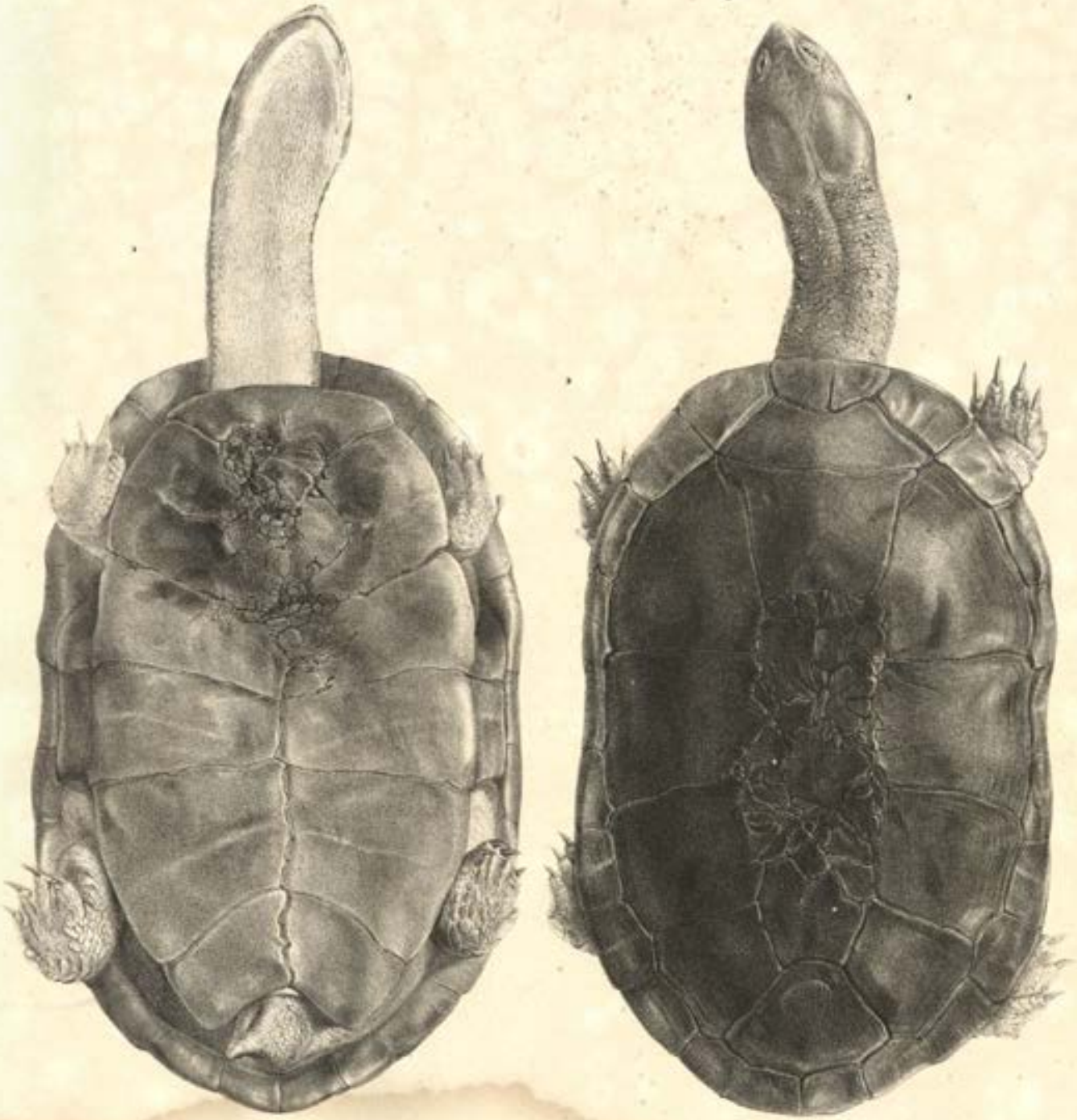
Testudo Raxarara, *Ferm. H. N. Holl. Equin.* 51.
T. fimbriata, *Schæid. Schildk.* 349.
Gmel. Syst. Nat. i. 1043.
Schœpff. Test. 97. t. 21.
Shaw, Zool. iii. 70. t. 18.
Chelys fimbriata, *Schweig. Prod.* 294.
Spix, Bras. t. 11.
Wagler, Syst. 134. t. 3. f. 4, 24.
Matamata fimbriata, *Merrem, Tent.* 21.
Testudo Matamata, *Brug. Journ. H. N.* 1792, 253. t. 13.
Latr. Rept. i. 9. t. 4. f. 1.
Schlegel, Faun. Japon. 41.
Dand. Rept. ii. 86. t. 20. f. 1.
T. terrestris major sive Raxarara, *Barrère, France Equin.* 60.
La Matamata, *Cuv. R. A.* ii. 15.
Chelyx fimbriata, *Gray, Ann. Phil.* x. 212; *Syn.* 431; *Cat. Tort. B.M.* 44.
Fitz. Syst. Rept. 30.
Dum. & Bib. Erp. Gén. ii. 455. t. 21, f. 1; *Cat. Méth. R.* 21.

Hab. Brazils.

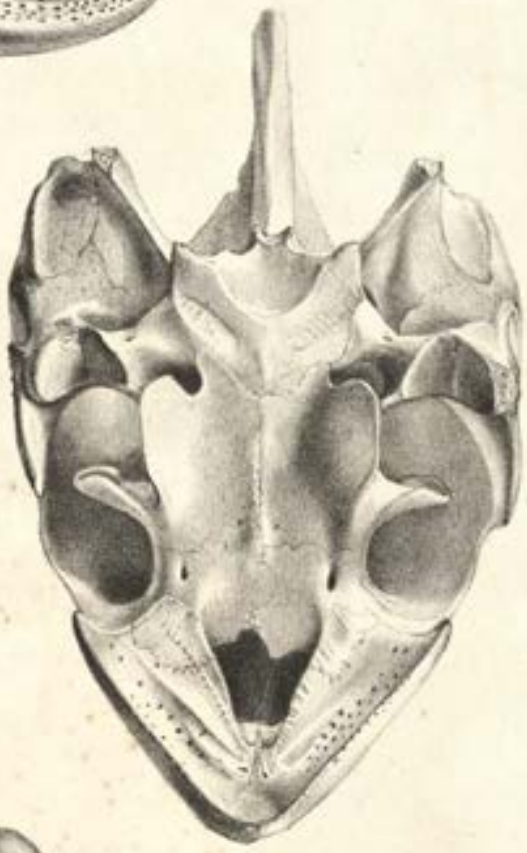
a, *b*, *c*. Adult (stuffed). Brazils.

OSTEOLOGY:—

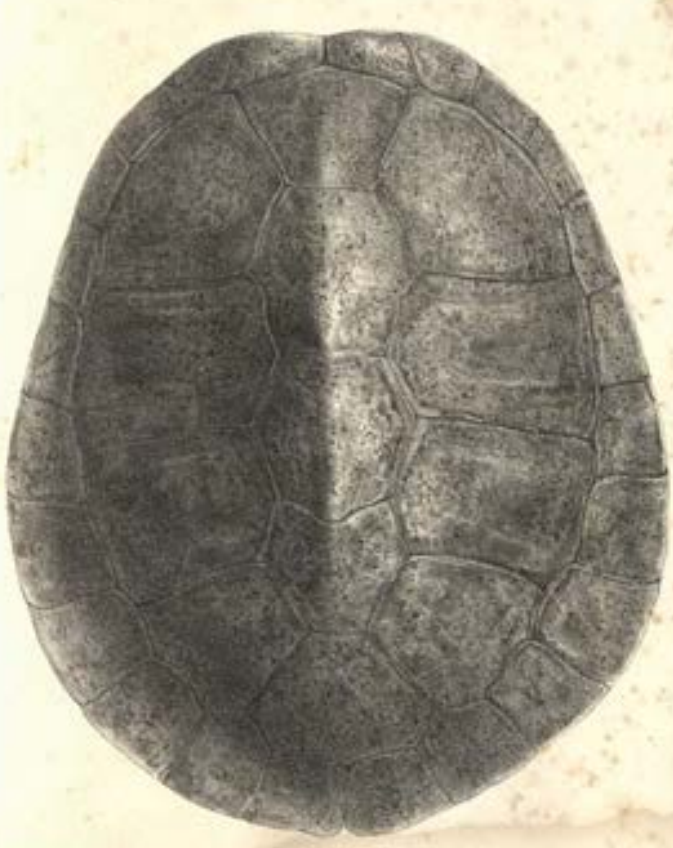
Testudo fimbriata, *Cuv. Oss. Foss.* v. 189. t. 11. f. 21, 24, skull; t. 11. f. 25, lower jaw.
Chelyde, *Cuv. Oss. Foss.* v. 194. t. 12. f. 41, os hyoides; t. 12. f. 3, clavicle; t. 12. f. 13 & 37, hand and foot.
Chelys Matamata, *Wagler, Syst.* t. 3. f. 3–24.

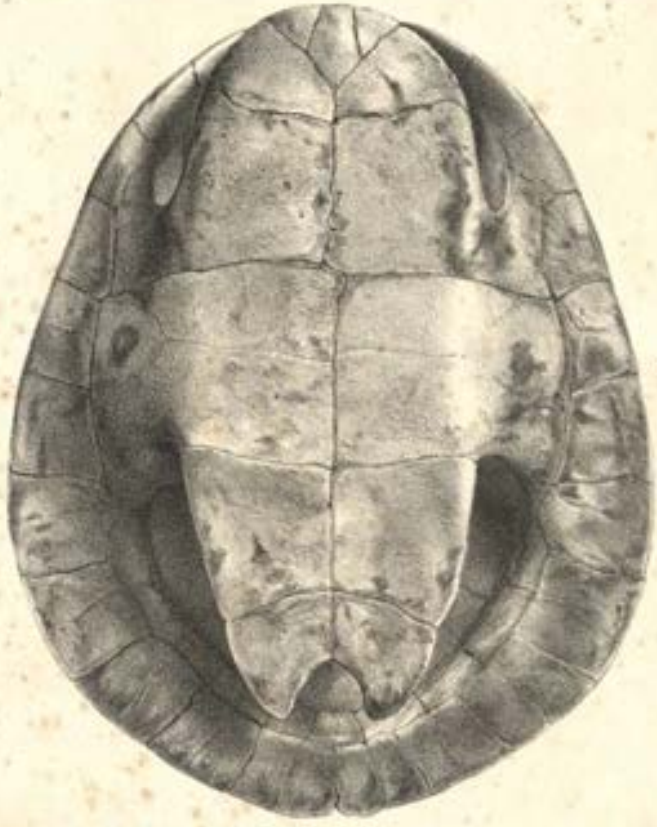


HYDROMEDUSA DEPRESSA.



1 PODONEMIS EXPANSA 2 EMYS SUBTRIJUGA





PODONEMIS EXPANSA

c. *Claws* 5·4. *Head convex, rounded, covered with hard shields; beaks naked.*

Chelydidæ B. *Gray, Cat. Tort. B.M.* 36 (1844).
Podocnemis, *Wagler, Syst.* 135 (1830).

9. PELTOCEPHALUS.

Head large, subquadrangular, pyramidal, covered with six large, thick, rather imbricate plates; forehead rounded. Eyes lateral. Jaws naked, very strong, hooked, toothless. Feet strongly webbed, with two large scales near the claws, without any compressed scales on the front edge of the hind legs. Claws 5·4, straight, strong. Tail clawed. Shell ovate, convex, rounded before, nicked behind. Nuchal plate none. Sternum solid; marginal plates 10·10; two caudal plates united into one plate.

Peltocephalus, *Dum. & Bib. Erp. Gén.* ii. 377 (1835); *Cat. Méth. R.* 18.
Fitz. Syst. Rept. 29.
Podocnemis, sp., *Wagler, Syst.* 135.

1. **Peltocephalus Tracaxa.** The TRACAXA.

Shell ovate, smooth, entire, blackish-brown; gular plates very small, subequal; pectoral plate short.

Peltocephalus Tracaxa, *Dum. & Bib. Erp. Gén.* ii. 378. t. 18. f. 2; *Cat. Méth. R.* 18.
Gray, Cat. Tort. B.M. 43.
Fitz. Syst. Rept. 29.
Emys Tracaxa, *Spix, Braz.* 6. t. 5.
Wagler, Syst. 135.
Emys macrocephala, *Spix, Bras.* 5. t. 4, old shell, worn.
Podocnemis tracaxa, *Wagler, Syst.* 135.
Podocnemis macrocephala, *Wagler, Syst.* 135.

Hab. Brazils.

a. Adult (stuffed). Shields concentrically grooved.
Emys Tracaxa, *Spix, Braz.* t. 5.

b. Adult (stuffed). Worn nearly smooth; head imperfect. Brazils.

E. macrocephala, *Spix, Bras.* t. 4.

10. PODOCNEMIS.

Head convex; crown with five shields, two nasal, one frontal, large, and two temporal, with a deep groove on the forehead; cheeks with large shields. Chin two-bearded. Jaws naked, slightly arched, toothless. Eyes superior, close. Legs with some thin crescentic scales in front. The upper part of the hinder edge of the hind foot covered with three large flat shields. Toes broadly webbed, with two broad thin scales above. Claws 5·4, short, broad, flattened. Tail short, not clawed, with a diverging series of horny cross ridges on each side. Shell rather solid; sterno-costal symphysis elongate; marginal plates 12·12; caudal separate. Nuchal plate none. Sternum broad, not mobile, narrower behind.

Podocnemis, sp., *Wagler, Syst.* 135.
Podocnemis, *Dum. & Bib. Erp. Gén.* ii. 282; *Cat. Méth. R.* 18.
Fitz. Syst. Rept. 29.
Gray, Cat. Tort. B.M. 25.

1. **Podocnemis expansa.** The PITIPU. TAB. XXVII.

Shell oval, entire, keeliess, very depressed when adult, tectiform and rather moderately keeled when young, much and horizontally expanded over the hind legs. Head broad, short; of young white-spotted.

Podocnemis expansa, *Wagler, Syst.* 135. t. 4. f. 1, 2.
Dum. & Bib. Erp. Gén. ii. 383: t. 19. f. 1; *Cat. Méth. R.* 18.
Gray, Cat. Tort. B.M. 45.
Fitz. Syst. Rept. 24.
Emys Amazonica, *Spix, Bras.* i. t. 1, adult; t. 2. f. 1, 2; young.
E. expansa, *Schweig. Prod.* 299. no. 8.
Schlegel, Faun. Japon. 48.
Hydraspis expansa, *Gray, Syn. Rept.* 41.
Testudo Arrace, *Humb. Pers. Nar.* iv. 482?

Hab. Brazils; Cayenne. Mus. Paris.

b. Adult (stuffed). Lakes of Upper Amazons: called *Pitipu.* Mr. Bates's Collection.

c. Young (in spirits). Head blackish, with a white edge to the sides of the nasal and upper orbital edge; back of the head with four round equal spots, the lateral one above the front of the tympanum; vertebral plates bluntly keeled; marginal plate very wide.

d. Young (stuffed; rather deformed). Animal and shell black; head white-spotted. Brazils. Zoological Society.

"Podocnemis expansa," *Bibron, MSS. Cat. Zool. Soc.* no. 366.

OSTEOLOGY. TAB. XXXVII. fig. 1, skull.

Emys expansa, *Cuv. Ost. Foss.* v. 184. t. 11. f. 9–12, skull.
Podocnemis expansa, *Wagler, Syst.* t. 4. f. 3–31.

a. Adult (female). Shell only. Brazils: called *Pitiu.* Mr. Bates's Collection.

c. Skull. Mr. Bates's Collection.

Spix described the young as having a yellow head with two black dots, which does not agree with the Museum specimens.

Schlegel regards *E. amazonica* and *E. erythrocephala* as synonyma of this species.

2. Podocnemis Dumeriliana. The Tracaja.
Tab. XXVIII.

Shell oval, convex, swollen, nicked in front, brown varied with black; the second and third vertebral plates keeled. Sternum yellowish; under side of marginal plates with a blackish-varied spot. Head elongate, rather narrow.

Podocnemis Dumeriliana, *Wagler, Syst.* 155.
Dum. & Bib. Erp. Gén. ii. 387; *Cat. Méth. R.* 18.
Gray, Cat. Tort. B.M. 45.
Emys Dumeriliana, *Schweig. Prod.* 300. no. 9.
Schlegel, Faun. Japon. 48.
Hydraspis Dumerilíana, *Gray, Syn.* 42.

Young. Head black, with a yellow spot on the forehead, two larger on each side of the occiput and temples, and two on each side of the jaws.

Emys Cayennensis, *Schweig. Prod.* 298. no. 6.
Emys erythrocephala, *Spix, Bras.* t. 7.
Hydraspis lata, *Bell, MSS.*
Gray, Syn. Rept. 77; *Cat. Tort. B.M.* 41.

Hab. Brazils; Venezuela; Cayenne; Guadaloupe. Mus. Paris.

a. Adult female (stuffed). Lakes of Upper Amazon: called *Tracaja*. Mr. Bates's Collection.
b. Young (stuffed); imperfect. Black. From the Zoological Society.
Hydraspis lata, *Bell.*
d. Young (in spirits). Brown; edge of shell yellow; beneath paler brown. Para. Mr. Bates's Collection.
e. Very young (stuffed).

Osteology:—
c. Adult shell. Tab. XXVIII.

"The male *Tracaja* and *Pitiu* are comparatively rarely caught; they never come on shore, and can only be obtained by the arrow; their number is also small in proportion to the females. I have not been able to obtain a specimen."—*E. Wallace, Proc. Zool. Soc.* 1851.

Schlegel regards *Emys Tracaxa*, *E. macrocephala*, and *E. Dumeriliana* as synonyms of this species, which he has not seen.

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3. Podocnemis sextuberculata. "Testa ovata sterno fortiter adhæsa, hoc sex tuberculos prebente secus margines laterales, caruncula mentali unica."

Cornalia, Vertet. Synopsis in Museo Mediolanensi (1849), 13. no. 13. f. 3.

b. Back covered with a soft skin. Toes digitate, webbed, three-clawed. Beaks covered with free fleshy lips.

Amyda, *Schweig. MSS. Institute of Paris* (1809) (see *Dum. & Bib. Erp. Gén.* i. 416, 421); *Prod.*
Trionyx, *Geoff. Ann. Mus. Hist. Nat.* xiv. 15.
Oppel, Rept. 10.
Merrem, Tent. 20.
Amydæa, *Oppel, Rept.* (1811).
Testudines steganopodes (part.), *Wagler, Syst.* 133.
Potamites ou Tortues fluviatiles, *Dum. & Bib. Erp. Gén.* ii. 461; *Cat. Méth. R.* 22.

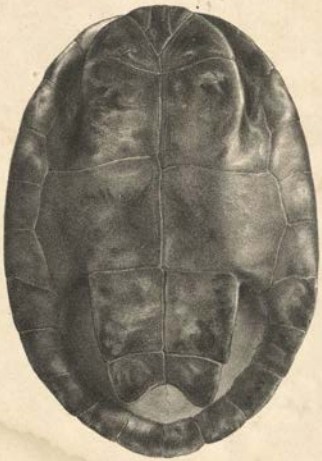
Fam. IV. TRIONYCIDÆ (Soft Turtles).

Head flattened, ovate. Eyes small, superior. Jaws horny, covered with dependent fleshy lips. Chin not bearded. Nostrils elongated into a thin cylindrical trunk. Neck long, contractile. Feet short, strong. Toes 5-5, short, expanded, strongly webbed, two outer clawless. Claws 3-3. Tail short, conical, simple. Shell covered with a hard cartilaginous skin, usually expanded and flexible on the edge, the ribs only united together and to the vertebræ above, separate below. Sternum formed of a ring of bones, covered with a continuous skin, and in the adults furnished with rough callosities on the prominent part. Pelvis only attached to the vertebræ. Living in rivers and lakes in warm climates: often lying in the mud with the head only exposed: eating flesh, and rarely vegetables. Eggs spherical.

The ribs become united together for a greater proportion of their length, and the sternal callosities appear and increase in size as the animal increases in age; hence they do not afford specific, much less generic characters.

Amyda, *Schweig. MSS.*
Trionicidæ, *Gray, Ann. Phil.* x. 211 (1825).
Bonap. Saggio Anàn. Fert. 13 (1832); *Tab. Analyt.* 10 (1836).
Swainson, Lard. Cyclop. 344.
Trionichidæ, *Bell, Zool. Journ.* iii. 515 (1828).
Chilotæ, *Wiegm. & Ruthe, Handb.* 167.
Trionicinæ, *Bonap. Tab. Analyt.* 10 (1836).
Trionix (Les Tortues molles), *Cuvier, R. A.* ii. 15.
Steganopoda labiata, *Fitz. Syst. Rept.* 30.
Trionyches, *Fitz. Syst. Rept.* 30.
Trionichoides, *Fitzinger, Neue Class.* (1826).
Phyllopodochelones (part.), *Ritzen, Nov. Act. Nat. Cur.* xiv. 269 (1828).
Chersydrochelones (part.), *Ritzen, l. c.* 269.
Amydæ (part.), *Ritzen, l. c.* 269.
Potamites ou Tortues fluviatiles, *Dum. & Bib. Erp. Gén.* ii. 461; *Cat. Méth. R.* 22.
Gymnopodi (part.), *Gray, Ann. Phil.* x. 212 (1825).
Trionyx, *Geoffroy, Ann. Mus.* xiv.
Oppel, Rept. (1811).

Geoffroy used as characters the existence and non-existence and form of the anterior vertebral bone; but all the



PODONEMIS DUMERILIANA

species of *Trionyx* have an *odd bone* ("marginal piece," Geoff.) on the margin, which is only slightly developed in the young. Geoffroy's figure of *T. Egyptiacus* is from an adult; *T. subplanus* and *T. carinatus* from young specimens; *T. Javanicus* from an imperfect one, as complete specimens of this species have this bone.

Fitzinger has divided this family into the genera *Trionyx* (*granosus*), *Aspidonectes* (*Javanicus*), *Platypeltis* (*Bronguiartii* and *ferox*), *Pelodiscus* (*Sinensis* and *labiatus*), *Amyda* (*subplanus* and *cartilicus*), according to the union and separation of the cervical bones and the ribs, and the rugosity and partial smoothness of the surface of the dorsal plates; but these characters alter with the age of the animals, and they separate nearly allied species and those coming from the same countries.

SYNOPSIS OF THE GENERA.

A. *Sternum broad, with valves over the feet. Sternal callosities 7 or 9.*

1. Emyda. The margin of the shield supported by bones. Sternal callosities three pairs, and a small anterior odd one behind the anterior pair.
2. Cyclanosteus. Margin of disk flexible, boneless. Sternal callosities four pairs, and an odd one behind the two anterior pairs.

B. *Sternum narrow at each end; the margin of the shield expanded, flexible, thin. Sternal callosities 4.*

§ *Head moderate; face conical; eyes lateral.*

3. Trionyx. Head moderate, ovate, narrow in front. Dorsal disk solid.
4. Dogania. Head very large, dilated behind, narrow in front. Dorsal disk not solidified until late in life.

§§ *Head elongate; face very short; eyes anterior.*

5. Chitra. Head dilated behind, broad and short in front; lips very large, swollen. Dorsal disk solid; first vertebral bone broad, crescent-shaped, early developed.

A. *Sternum broad, with valves over the feet. Sternal callosities 7 or 9.*

Trionycidæ A, *Gray, Cat. Tort. B.M.* 46.
Trionyx, *Bell, Zool. Journ.* iii. 516.
Wagler, Syst. 134 (1830).
Fitz. Syst. Rept. 30.
Bonap. Tab. Analyt. 10 (1836).
Cryptopus, *Dum. & Bib. Erp. Gén.* ii. 501; *Cat. Méth. R.* 23.

1. EMYDA.

Head moderate, ovate, narrow in front. Eyes near nose. Lips very thick. Dorsal disk convex, solid. Margin of the shell supported with a series of bones behind. Sternum broad, rounded before and behind, with a moveable valve over each foot. Sternal callosities (of adult) 7, three (2·1) anterior, two lateral and two posterior.

Emyda, *Gray, Syn. Rept.* ; *Cat. Tort. B.M.* 46.
Trionyx, *Bell, Zool. Journ.* iii. 516 (1828).
Wagler, Syst. 134.
Fitz. Syst. Rept. 30.
Cryptopus, *Dum. & Bib. Erp. Gén.* ii. 501 (1835); *Cat. Méth. R.* 23.

1. Emyda punctata. The BUNGOMA.

Shell oval, convex, granular, green (young with eyed spots); head with two orange spots on the occiput (young with a yellow streak from each eye, and the nape yellow-spotted). The odd anterior callosity small, roundish, triangular; the posterior callosities of adult ovate, inner edge semicircular; of young triangular, far apart.

Emyda punctata, *Gray, Syn. Rept.* 50; *Illust. Ind. Zool.* ii. t. 62, young; *Cat. Tort. B.M.* 46; *Proc. Zool. Soc.* 1855.
Bell, Testud. t.
La Chagrinée, Testudo punctata, *Lacép. Q. O.* i. 171.
Testudo granosa, *Schoepff. Test.* 127. t. 30 A, B.
Trionyx granosus, *Schweig. Prod.* 288.
Wagler, Syst. 134. t. 2. f. 2, 33.
Fitz. Syst. Rept. 30.
Gray, Ind. Zool. ii. t. 64.
Schlegel, Faun. Japon. 35. t. 5. f. 4.
Cryptopus granosus, *Dum. & Bib. Erp. Gén.* ii. 501; *Cat. Méth. R.* 23.
Testudo scabra, *Latr. Rept.* i. 194.
T. Dura, *B. Hamilton, Icon. ined.* no.
T. granulata, *Shaw, Zool.* iii. 68. t. 14. f. 1.
Daud. Rept. ii. 81. t. 19. f. 2.
Trionyx Coromandelicus, *Geoff. Ann. Mus.* xiv. 16. t. 5. f. 1.
Merrem, Tent. 20.

Hab. India; Pondicherry; Bengal.

a–c. Adult animal and shell (stuffed). India. From M. Picquot's Collection.

f, g. Young (in spirits). India. From M. Picquot's Collection.

h. Young (stuffed). From the Museum of the Bengal Society.

k. Very young (stuffed). India. Capt. Boys' Collection.

l. Adult (stuffed). India. Capt. Boys' Collection.

OSTEOLOGY:—

Trionyx granosus, *Cuv. Oss. Foss.* v. 202. t. 12. f. 47, sternum.

d, e. Upper shells only. India. M. Picquot's Collection.

i. Upper shield only. India. Presented by Gen. Th. Hardwicke.

2. Emyda Ceylonensis. The Ceylon Dura.

Tab. XXIX. *a*.

Back and upper part of the head (in spirits) dull pale uniform olive-brown; lips and lower part of the body whitish. The odd anterior sternal tubercle large, oblong, transverse; the hinder callosities large, close, nearly united in the adult, with straight parallel edges.

Emyda punctata, *Kelaart, Prod. Faun. Ceylon.* 179.

Hab. Ceylon.

a. Half-grown (in spirits). Ceylon (*F. Layard, Esq.*).

b. Adult (shell only). Ceylon. From the Zoological Society. Sent by Dr. Kelaart.

Dr. Kelaart described this species, probably from life, as "olive-green, with indistinct brown stripes, and minutely punctulated; beneath white or fleshy-white. Head green, black-striped; lips yellow." . . . "This Water Tortoise is generally distributed in the lower part of the island, and is found in lakes and tanks. Several we kept alive for months in a tub filled with fresh water, fed freely on animal food, and also on bread and boiled rice. A large female laid three eggs, globular, about an inch in diameter, with a hard calcareous shell. This Tortoise too is put into wells to act the part of scavenger." It is called *Kiri-Ibba* in Cingalese.

3. Emyda Senegalensis. The African Bungoma.

Back, head and neck (of young) grey, with minute white spots; sternum blackish, edged with dirty white.

Emyda Senegalensis, *Gray, Cat. Tort. B.M.* 47.
Cryptopus Senegalensis, *Dum. & Bib. Erp. Gén.* ii. 504; *Cat. Méth. R.* 23.

Hab. "Senegal." Mus. Paris.

Perhaps the young of *Cyclanosteus Petersii*.

2. CYCLANOSTEUS.

Head moderate, ovate. Margin of the dorsal disk not supported by bones. Sternum broad, rounded before and behind, with a moveable flap over each foot. Sternal callosities 9, viz. four pairs, and an odd one behind the two anterior pairs; the pair on the hinder lobe small, far apart.

Cyclanosteus, *Peters, MSS.* (1848).
? Cryptopus, sp., *Dum. & Bib. Erp. Gén.* ii. 504.

1. Cyclanosteus Petersii. The Gambian Cyclanosteus.

Tab. XXIX.

Shell broad, rounded before and behind; sternal callosities 9.

Cyclanosteus (Cyclanorbis) Petersii, *Gray, Proc. Zool. Soc.* 1853; *Ann. & Mag. Nat. Hist.* xv. 69 (1855).

Hab. W. Africa; Gambia.

Osteology:—

b. Shell only, with back margin. Gambia. Presented by the Earl of Derby.

a. Skeleton (imperfect). Gambia. Presented by the Earl of Derby. From Mr. Whitfield's Collection.

2. Cyclanosteus frenatus. The Bridled Cyclanosteus.

Face black-lined.

Cyclanosteus frenatus, *Peters, MSS.* (1848).
Casi, *Native of Mozambique.*

Hab. Mozambique (in fresh water); River Zambia, (*Peters*).

B. *Sternum narrow at each end; margin of the shield expanded, thin, flexible. Sternal callosities 9.* Trionycina.

Trionyx, *Gray, Syn. Rept.*
Amyda, *Bonap. Tab. Analyt.* 10 (1836).
Aspidonectes, *Wagler, Syst.* 134 (1830).
Fitz. Syst. Rept. 30.
Gymnopus, *Dum. & Bib. Erp. Gén.* ii. 477; *Cat. Méth. R.* 22.
Trionyx, sp., *Bell*?

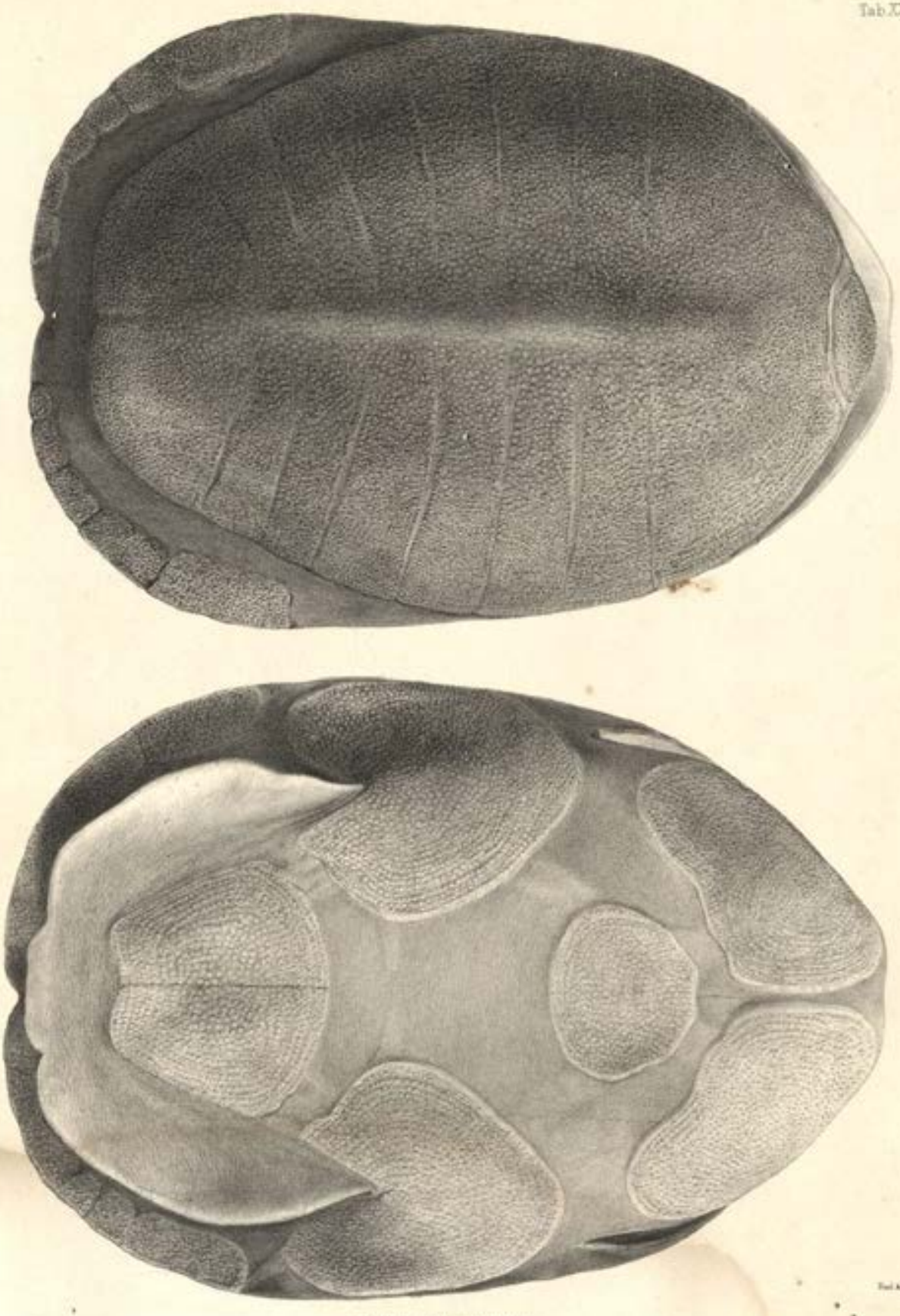
§ *Head moderate; face conical; eyes lateral.*

3. TRIONYX.

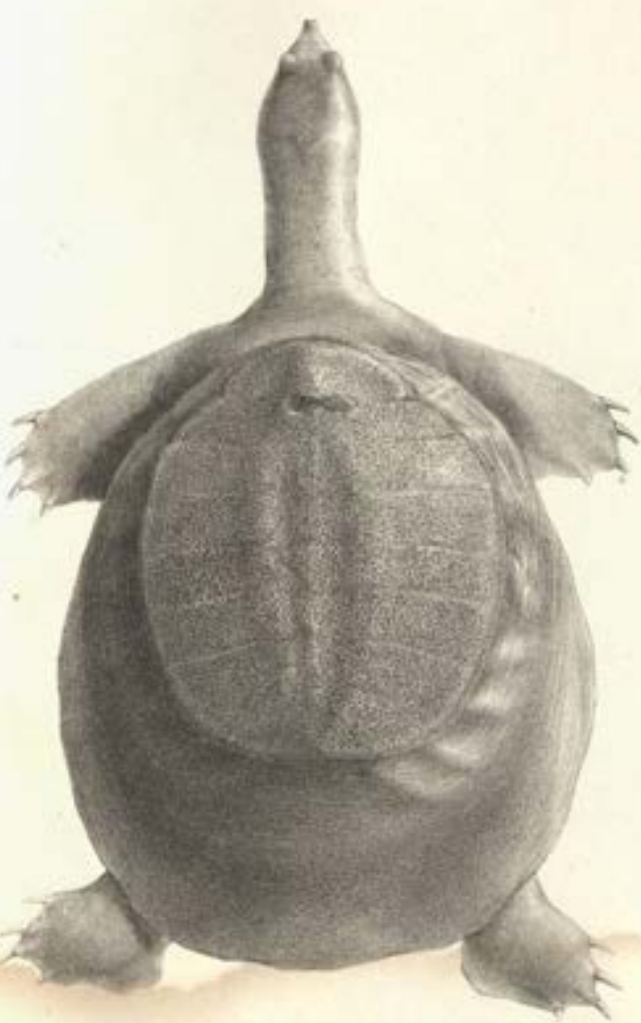
Head rather large, ovate, dilated behind. Muzzle rather elongate, conical. Lips thick. Shield flexible on the edge. Ribs 8–8. Sternum narrow at each end. Sternal callosities 2 or 4; the lateral one occupying part of both lateral sternal bones.

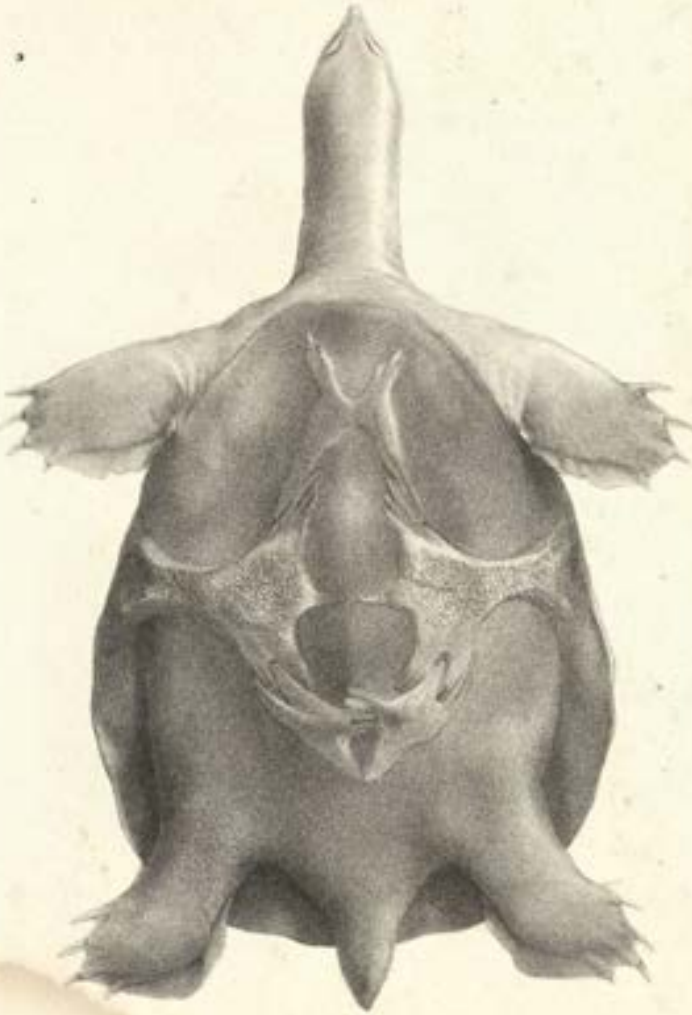
Trionyx, *Gray, Cat. Tort, B.M.* 49 (1844); *Ann. Phil.* x. 212 (1825).
Tyrse, sp., *Gray, Cat. Tort. B.M.* 47 (1844).
Trionyx, sp., *Geoff. Ann. Mus.*
Platypeltis, *Fitz. Syst. Rept.* 30.
Trionix (ferox), *Flem. Phil. Zool.* ii. 271.
Aspidonectes α, sp., *Wagler, Syst.* 134.
Aspidonectes β, *Wagler, Syst.* 134.
Aspidonectes, *Fitz. Syst. Rept.* 30 (1843).

CYCLANOSTEUS PETERSII.

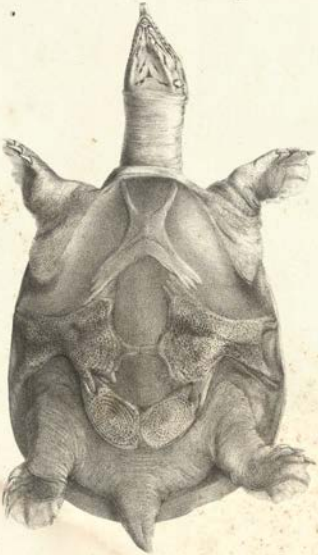


EMYDA CEYLONENSIS





TRIONYX HAPEHI



TRIONYX MENGELIATUS

Gymnopus, sp., *Dum. & Bib. Erp. Gén.* ii. 477; *Cat. Méth. R.* 25.
Potamochelys, *Fitz. Syst. Rept.* 30 (1843).
Pelodiscus, *Fitz. Syst. Rept.* 30 (1843).

I had divided the American from the Old World species, believing they had only seven ribs, but on re-examination I find they both have the same number of ribs.

The species may be thus divided according to their osteological characters, but they can only be used with certainty by those who have a series of specimens of different ages of each species before them.

* *First vertebral bone broad, crescent-shaped, early developed; episternal bones rather far apart at the base.*

† *Callosities* 2; *dorsal disk with two pits in front, one on each side of the first vertebra.*

1. Trionyx Rafeht.

†† *Callosities* 4; *dorsal disk with two pits in front.*

2. T. Argus.

††† *Callosities* 4; *dorsal disk without any pits in front.*

3. T. perocellatus. 4. T. Niloticus. 5. T. Gangeticus. 6. T. ferox. 7. T. muticus.

** *First vertebral bone oblong, not developed until late in life; episternal bones elongate, close together at their base. Callosities* 4.

8. Tyrse Javanicus. 9. T. carinaiferus. 10. T. frenatus.

They may be divided according to the colouring of the head and limbs, but these colours often disappear or become indistinct in the adult animal.

* *Head and limbs with subequal white spots.*

1. Trionyx Rafeht. 2. T. Niloticus.

** *Head and limbs with small and some larger white spots.*

3. T. Gangeticus. 4. T. carinaiferus.

*** *Head spotted with longitudinal narrow black lines; lips and chin spotted.*

5. T. perocellatus. 6. T. ferox.

**** *Head with diverging black streaks on the crown.*

7. T. Javanicus. 8. T. frenatus.

***** *Head with black-edged streaks enclosing the eye.*

9. T. Argus. 10. T. ferox (T. spiniferus).

The young of *T. Niloticus*, *T. Gangeticus*, *T. Javanicus*, *T. frenatus* and *T. ferox* have the spinose tubercles on the back in numerous parallel lines; *T. perocellatus* has them in distant, rather irregular lines; and *Chiton Indica* has close, isolated, rounded tubercles, very much crowded together on the nape; the side and hinder part of the disk smooth.

* *Asiatic.*

1. Trionyx Rafeht. The Rafeht. Tab. XXX.

Dull green. Head white-dotted. Sternal callosities 2; lateral transverse, rather dilated at the inner end; anterior sternal bones far apart; anterior part of the disk with two rounded cavities between the broad lunate first and the second vertebral bones.

Tyrse Rafeht, *Gray, Cat. Tort. B.M.* 49.
Testudo Rafeht, *Oliv. Voy. Pers.* ii. 453. t. 41.
Shaw, Misc. t. 907.
Testudo Euphratica, *Daud. Rept.* ii. 305.
Trionyx Euphraticus, *Geoff. Ann. Mus.* xiv. 17.
Gray, Syn. 48.
Gymnopus Euphraticus, *Dum. & Bib. Erp. Gén.* ii. 498; *Cat. Méth. R.* 22.
Martin, Proc. Zool. Soc. 1840, 56.

Hab. Tigris and Euphrates. Mus. Zool. Soc.

a. Adult (stuffed). Euphrates. Presented by Mr. Loftus, Euphrates Expedition, 1850.

b. Adult (without sternum). Euphrates. From the Zoological Society. Presented by Capt. Chesney. Tab. XXX. Described by Mr. Martin, *Proc. Zool. Soc.*

Osteology:—

Skull of "*a*." Euphrates.

The skull is much shorter and broader than that of *T. Niloticus*.

2. Trionyx perocellatus. The Eyed Boulousse.

Tab. XXXI.

Back of young with distinct irregular lines of tubercles, with six obscure spots. Head and neck olive; lip and chin with small white spots, with narrow brown streaks from the front of the eyes to the lip, and from the back of the eyes across the temple; anterior dorsal bone large, broad. Sternal callosities 4; hinder oblong, trigonal, oblique, with the rugosities in concentric oblong rings.

Tyrse perocellata, *Gray, Cat. Tort. B.M.* 48.
Trionyx perocellatus, *Cantor, Ann. & Mag. Nat. Hist.*
T. tuberculatus, *Cantor, MSS.*
T. stellatus, var. Javanicus, *Schlegel, Faun. Japon.* t. 5. f. 6?, t. 7. f. 1, 2.

Hab. China; Chusan.

a, b. Half-grown (in spirits). Chusan. Presented by the Hon. East India Company, from Dr. Cantor's Collection.

c. Younger (in spirits). Sternum black-spotted. Chusan. Presented by the Hon. East India Company, from Dr. Cantor's Collection.

e. Adult (stuffed). Disk 7 inches long, with two very small pits in front. China.

f. Young (in spirits). The head in spirits lead-coloured black, black-dotted, with a narrow black streak on the forehead from the front of the upper part of each eye, and a narrow black streak from the lip through the eye and extended on the sides of the nape. Throat whitish, marbled with blackish. China. Dr. Berthold Seemann. Tab. XXXI. From Haslar Museum.

This species differs from *T. carinatus* in wanting the regular series of tubercles forming a keel on the back of the dorsal disk.

Mr. Seemann's specimen has the markings on the head very like those of a young stuffed specimen of *T. ferox* from North America which we received from Mr. W. Smith; but the streak from the back of the eye in the American species is double, that is to say, pale, with a black edge on each side.

This species may always be known in the young state by the scattered and irregular distribution of the dorsal tubercles.

3. Trionyx Gangeticus. The Kaarey.

Olive, vermiculated with dark brown (when young, with four or five large eyed spots). Head olive, white-dotted, with a yellow spot (white in spirits) behind each eye, at the angle of the mouth and on each side of the chin, and one on each side of the neck below the cheek.

Tyrse Gangetica, *Gray, Cat. Tort. B.M.* 47.
Trionyx gangeticus, *Cuv. R. A.* ii. 16; *Guérin, Icon.* t. 1. f. 6, young.
Schlegel, Faun. Japon. 35; *Cuv. Oss. Foss.* iii. 222, adult.
Aspidonectes gangeticus, *Wagler, Syst.* t. 2. f. 12–18.
Trionyx stellatus, var. Japonicus, *Schlegel, Faun. Japon.* t. 5. f. 7?
Trionyx Hurum, *Gray, Illust. Ind. Zool.* t. 1.; *Syn. Rept.* t. 10.
Testudo Hurum, *B. Hamilton, Icon. ined.* no. 13.
Gymnopus Duvaucelii, *Dum. & Bib. Erp. Gén.* ii. 487; *Cat. Méth. R.* 22.
Testudo Chin, *B. Hamilton, Icon. ined.* no. , copied *Gray, Syn. Rept.* 47. t. 10.
Test. ocellata, *B. Hamilton, Icon. ined.* no. 14.
Gray, Illust. Ind. Zool. t. 7.
Gymnopus Gangeticus, *Cantor, Rept. Malac.* 8.
Jacquem. Voy. Ind. Rept. t. 9.
?? Pelodiscus Sinensis, *Fitz. Syst. Rept.* 30.
Gymnopus ocellatus, *Dum. & Bib. Erp. Gén.* ii. 189, young.

Hab. India; Ganges.

a, b, c. Young (in spirits); 4 inches. Back with four black spots. India; Ganges.

d, e. Young (in spirits); 4 inches. Back with four large and two small posterior black spots. India; Ganges.

f. Very young (in spirits). Marks on face and spots on back very distinct. India. Mr. Argent's Collection.

Osteology. Tab. XLIII. fig. 1, skull.

Trionyx du Ganges, *Cuv. Oss. Foss.* v. 187. t. 11. f. 5, 8, *skull*; *t. 13. f. 12*; *t. 12. f. 16, sternum.*

g, h. Dorsal disk, vertebra and ribs only. Nepaul. Presented by J. B. Hodgson, Esq.

i. Dorsal disk, vertebra and ribs only. Nepaul. Presented by H. Falconer, M.D.

j. Skull of adult. Suttapoor; Ganges. Capt. Boys' Collection. Tab. XLIII. fig. 1.

k. Skull (half-grown: imperfect). India.

l. Dorsal shields and sternum, India. From the Zoological Society.

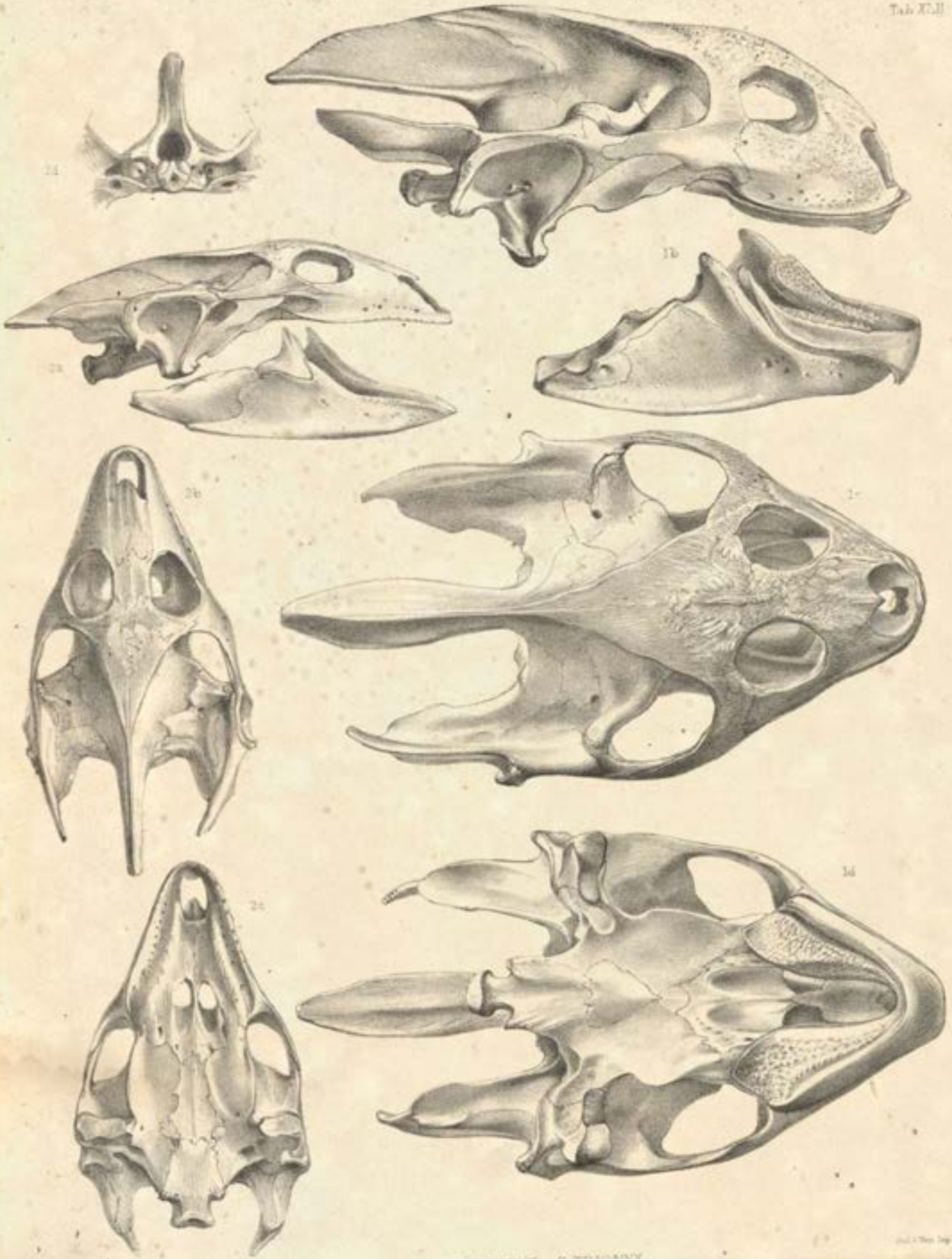
These bones (*g, h, i* and *l*) may all possibly belong to *T. Javanicus*, as they were procured without any head or other characteristic parts.

"The young (*Testudo ocellatus, Buch. Hamilt. MSS.*; *Gray, Illust. Ind. Zool.* t.):—The head above pale olive, with a large yellow spot between the eyes and a similar one behind each eye; neck, limbs, and posterior margin of the shell dark olive, with paler round spots. Shell olive, with black irregular lines and four or five central ocelli, black in the centre, edged with red, round which a black ring. Sternum pale whitish olive."

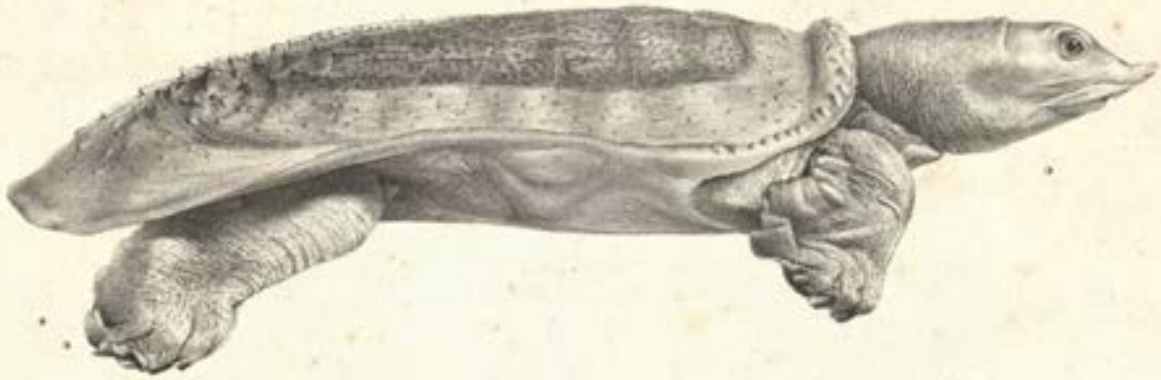
In the transition state, being about changing the livery (*Testudo Hurum, B. Hamilt. MSS.*, cop. *Gray, Illust. Ind. Zool.* t.):—"Head yellow-olive, with irregular dark lines. Shell light olive, vermiculated with blackish or dark olive; the four ocelli are present, but are altered in colour and shape; the centre, instead of being black, is, like the rest of the surface, light olive, vermiculated with black; the red ring is changed to black, and the outer black one to light olive. The shape is changed from round to irregular olive. Adult (*Testudo Chin, B. Hamilton, MSS.*): dark olive-green, vermiculated and spotted with light olive-brown; beneath greenish-white.

"It is of fierce habits, desperately defending itself by biting, and emitting, when excited, a low, hoarse, cackling sound."—*Cantor.*

The largest specimen Dr. Cantor observed at Pinang measured as follows:—Head 4; neck 4½; shell 25; tail 5 inches.



1 TRIONYX GANGETICUS 2 TRIONYX



TRIONYX CARINIFERUS

4. Trionyx cariniferus. The KEELED BOULOUSSE.
TAB. XXXII.

The front edge of dorsal disk tubercular; the hinder part of the disk with a central keel, continued by a central series of close triangular acute tubercles. Olive. Head large; two front sternal bones very elongate, produced; the anterior vertebral bone rudimental. Sternal callosities ——?

Hab. Moluccas.

a. Half-grown (in spirits). Yellow. Head like body; side and end of disk with scattered acute tubercles. Moluccas. From the Leyden Museum.

Trionyx, n. s., *Mus. Leyden.*
? Testudo alba, *Bodd. Epist.* iii. 21.

c. In spirits (like *a*). Amboina; Ceram. Madame Ida Pfeiffer's Collection.

d, e. Young (in spirits). Olive, with small round dark spots; the larger spots in three series, one down the vertebral line, and the others in the middle of the sides. Head dark above and below, symmetrically white-spotted, the spots of the occiput and those of the chin larger, and with a very large irregular white spot at the side of the neck; back of neck and feet white-spotted. Amboina or Ceram. Madame Ida Pfeiffer's Collection.

f, g. Young (in spirits); like *d* and *e*. Mr. Bartlett's Collection.

OSTEOLOGY:—

b. Half-grown skeleton; anterior vertebral bone not developed. Java. From the Leyden Museum.

Trionyx stellatus, *Mus. Leyden.*

The specimens of this species are larger than the stuffed example of *T. Javanicus*, but yet they have no appearance of any sternal callosities.

5. Trionyx frenatus. The BRIDLED BOULOUSSE.

Olive-brown (in spirits). Back with numerous close lines of small tubercles, two central parallel, the others rather irregular. Head brown, with a dark streak on the forehead, divided behind the eyes into three broad indistinct diverging streaks, and one from the lips at the base of the proboscis through the eyes to the sides of the throat; lips brown, pale-spotted; throat pale brown, sides of the neck whitish. Sternal callosities 4, small.

a. Young (in spirits). From the Museum of the Zoological Society.

"Gymnopus Javanicus," *Bibron, MSS., Mus. Zool. Soc.*

b. Half-grown female (stuffed). It contained many full-sized eggs: the sternal callosities are only very slightly developed. Singapore. Mr. Wallace's Collection.

This species is very like *Dagonia subplana*, but the head is smaller and brown-lined, and there are indications of four sternal tubercles. The ribs are narrower, and the ends of the ribs are nearer the front side of the dilated part, and not in the centre, as in our specimen of *D. subplana*. The rudiments of the sternal callosities are on each of the two lateral sternal bones, while in *Dagonia* they are only found on the anterior pair.

The young specimen was named *Trionyx Javanicus* by M. Bibron, but the head was then entirely contracted into the shell, so that only the tip of the nose could be seen. It differs from that species in the position of the dark streaks, and in their being much less distinctly marked.

6. Trionyx Javanicus. The BOULOUSSE.

The front and hinder edge of the dorsal disk tubercular. Olive-green; crown of the head with one central and two radiating black lines; two front sternal bones elongate, produced.

Testudo Javanica, *Osbeck, China*, 149?
Tyrse Javanica, *Gray, Cat. Tort. B.M.* 47.
Trionyx Javanicus, *Geoff. Ann. Mus.* xiv. 15. t. 3.
Schweig. Prod. 287.
Gray, Syn. Rept. 48; *Illust. Ind. Zool.* t. . f. 1, 2.
Gymnopus Javanicus, *Dum. & Bib. Erp. Gén.* ii. 493; *Cat. Méth. R.* 22.
Potamochelys Javanicus, *Fitz. Syst. Rept.* 30.
Aspidonectes Javanicus, *Fitz.*
Wagler, Syst. t. 2. f. 1–11.
Cantor, Rept. Malac. 8.
Testudo Gataghol, *B. Hamilton, Icon. ined.* no. 15? cop.
Gray.
T. rostrata, *Thunb. N. Act. Succ.* viii. 179. t. 7. f. 2, 3.
Schoepff. Test. 93. t. 20.
Daud. Rept. ii. 77, young.
T. cartilaginea, *Bodd. Bert. Naturf.* ii. 263.
T. Boddaertii, *Schneid. Schildk.* t. 1. f. 1, 2.
T. membrannacea, *Blumenb. Beyt.* t. 2.
Trionyx stellatus, *Geoff. Ann. Mus.* xiv. 13, young.
Boulousse, *Javanese.*

Hab. Java.

a. Half-grown? (in spirits); 5½ inches. India.

b, c. Young (in spirits); not eyed. India.

d. Half-grown (stuffed). Back with irregular rugose ridges; anterior bone separate; lateral sternal callosities contracted in the middle; hinder oblong, oblique. India; Deccan. Presented by Colonel Sykes, F.R.S.

e, f. ? Very young (in spirits); not good state. China. Presented by W. Baird, M.D.

g, h, i. Very young (in spirits). Back eyed. India.

j. Very young (dry skin). India.

k. Half-grown (stuffed). First vertebral bone slightly developed. India. Capt. Boys' Collection.

l. Very young (stuffed). India. Capt. Boys' Collection.

m. Adult (stuffed). The first vertebral bone united to the other, forming one disk. Head with seven black diverging rays. India. Capt. Boys' Collection.

"*Very young*: above olive-green; the head and upper part of the neck with numerous small white spots, becoming larger and more distant on the cheeks and chin; on the vertex two round black spots, on the occiput two diverging black lines. The shell with several large black, white-ringed spots, between which numerous smaller indistinct white spots; margin pale white; several longitudinal ridges composed of close minute tubercles: beneath greenish-white. *Older*: above uniform olive-green; the longitudinal ridges of the shell consist of tubercles more distant and proportionally smaller than in the young."—*Cantor.*

This species is numerous in ponds and rivers in Pinang. The largest that Dr. Cantor observed measured as follows:—Head 2¼; neck 2½; shell 6½ inches; tail ⅜ of an inch long. Eaten by the Chinese.

** *African.*

7. Trionyx Niloticus. The Tyrse.

Shell rather convex, vertebral line often depressed; back green, spotted with white or yellowish. Callosities 4, far apart, lateral, dilated internally, hinder triangular; first and second vertebral bones united by a *smooth* suture.

Tyrse Nilotica, *Gray, Cat. Tort. B.M.* 48.
Trionyx Niloticus, *Gray, Syn.* 46.
Schlegel, Faun. Japon. 32.
Testudo triunguis, *Forsk.* 9.
Gmel. Syst. Nat. 1039.
Trionyx Ægyptiacus, *Geoff. Egypt.* i. 116. t. 1.
Schweig. Prod. 286.
Merrem, Amph. 20.
Guér. Icon. t. 1. f. 7.
Gymnopus Ægyptiacus, *Dum. & Bib. Erp. Gén.* ii. 484; *Cat. Méth. R.* 22.
Trionyx labiosus, *Bell. Test.* t. , from life.
Emys seu Emis, *Aristot. Hist. Anim.* v. 9.
Aspidonectes Ægyptiacus, *Fitz. Syst. Rept.* 30.
Le Tyrse ou Tortue molle du Nile, *Cuv. R. A.* ii. 15.

Hab. North Africa; Nile; Egypt; Abyssinia; W. Africa.

a. Adult (stuffed). Anterior dorsal plate united to the others. Egypt. Presented by Turnbull Christie, M.D.

c. Half-grown (in spirits). Brown, with small white specks on shields and body, with some series of rather larger specks. G. Massam, W. Africa.

b. Very young (stuffed). Egypt. Presented by Turnbull Christie, M.D.

f. Young (in spirits). W. Africa. Mr. Rich's Collection.

d. Half-grown (stuffed). Anterior dorsal plate scarcely united. Egypt. From the Zoological Society.

e. Adult (stuffed). Egypt. Mr. Thornton's Collection.

Osteology. Tab. XLIII. fig. 2, skull.

Trionyx labiosus, *Bell, Testudinata*, t. , dorsum and sternum.

g. Skeleton (mounted). Egypt. Dr. Rüppell's Collection.

h. Skeleton (mounted) of smaller animal. From the Zoological Society.

8. Trionyx Argus. The Eyed Tyrse.

Olive-black, with numerous pale-edged, narrow, black rings. Head and feet marbled with black, with a black-edged yellow streak from the tip of the nose to the ear, enclosing the eye; lips yellow, black-edged; nuchal bone transverse, separate. Sternal callosities 4; hinder ones rather distant; anterior vertebral bone broad, with two pits in the suture.

Tyrse Argus, *Gray, Cat. Tort. B.M.* 48; *Knowsley Menag.* t.

a. Half-grown (stuffed). West Africa; Sierra Leone? Presented by the Earl of Derby.

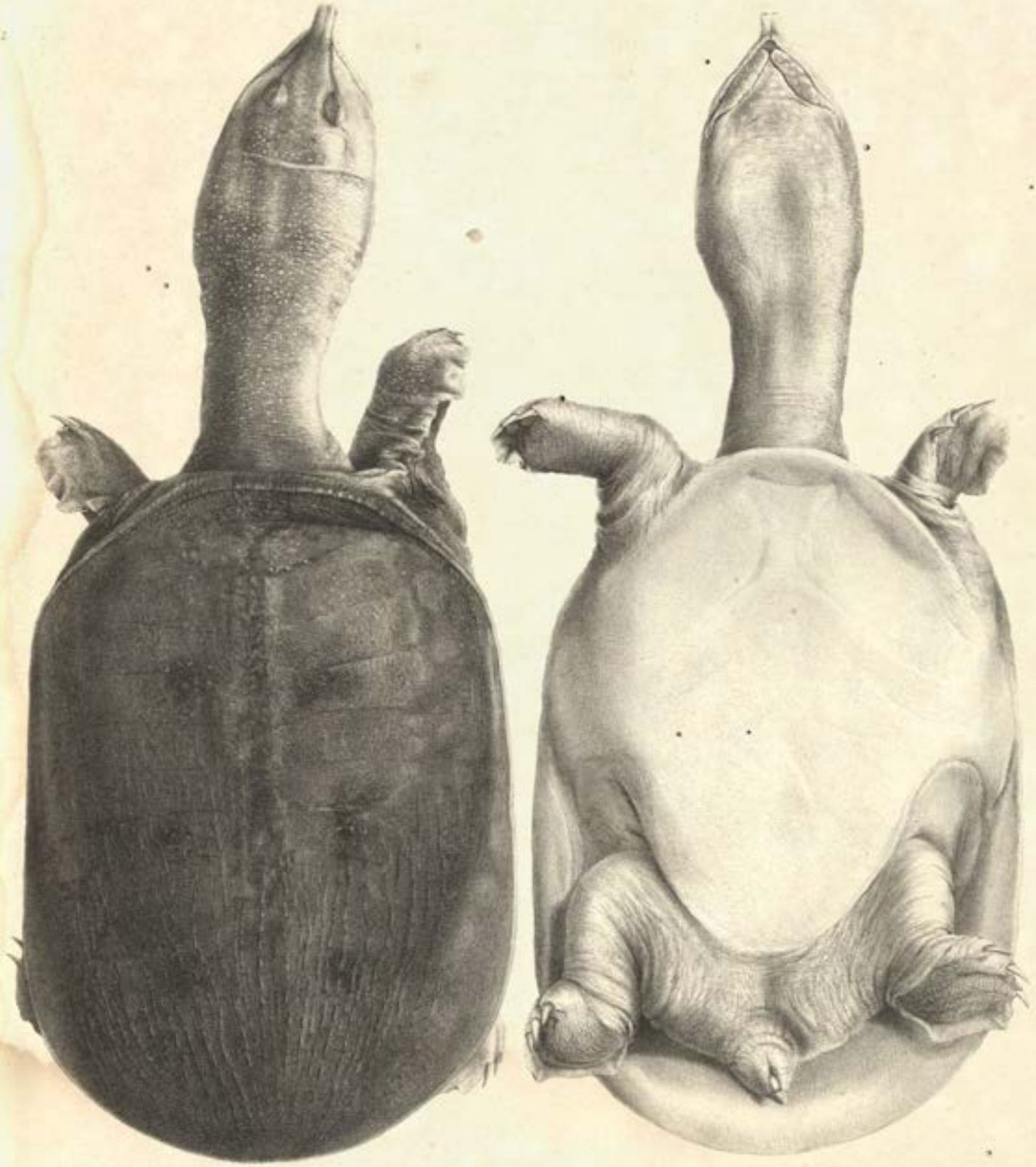
Consult—Trionyx Mortoni, *Hallowell in Proc. Acad. Sci. Philad.* ii. 120. *Hab.* Africa.

*** *American.*

9. Trionyx ferox. The Fierce Trionyx.

Thorax very depressed, with a series of spinous tubercles on the front edge of the back. Head with a dark-edged streak from nostril across the eyes to the temples. A continued longitudinal central series of keeled spines on the hinder part of the back, and other smaller series of smaller tubercles.

Trionyx ferox, *Leconte, Ann. Lyc. N. Y.* iii. 93 (1830).
Merrem, Tent. 20.
Gray, Ann. Phil. x. 212; *Syn.* 43.
Say, Journ. Acad. Philad. ii. 203.
Schlegel, Faun. Japon. t. 5. f. 5, head.
Schweig. Prod. 285.
Testudo ferox, *Penn. Phil. Trans.* lxi. 266. t. 10. f. 5.
Schneid. Schildk. 330.
Schoepff. Test. t. 19.
Shaw, Zool. iii. 64. t. 17. f. 1.
La Molle, *Lacép. Q. O.* i. 137. t. 7.
Trionyx Georgicus, *Geoff. Ann. Mus.* xiv. 7.
Trionyx spiniferus, *Lesueur, Mem. Mus.* xv. 258. t. 15.
Holbrook, N. A. Herpet. ed. 2. ii. 11. t. 1.
DeKay, New York, 6. t. 6. f. 11.



DOGANIA SUBPLANA.

Gymnopus spiniferus, *Dum. & Bib. Erp. Gén.* ii. 477. t. 22. f. 1; *Cat. Méth. R.* 22.
Trionyx carinatus, *Geoff. Ann. Mus.* xiv. t. 4.
Merrem, Tent. 21, young.
Aspidonectes ferox, *Wagler, Syst.* t. 2. f. 34, 35.
Trionyx Brongniartii, *Schweig. Prod.* i. 288.
Freshwater Turtle, *Garden.*
Fierce Turtle, *Shaw.*
Testudo Boddaertii, *Schneid. Leipz. Mag. Nat. & Œkon.* 1706, iii. 253.
Platypeltis ferox, *Fitz. Syst. Rept.* 30.

Hab, North America; Georgia and Florida; New Orleans.

a. Adult (stuffed). North America. Presented by the Royal Society. The specimen described and figured by Pennant (re-stuffed).

b. Half-grown (in spirits). North America.

c. Young (in spirits; bleached). North America. Mr. Frank's Collection.

d. Very young (in spirits). Back with small dark rings. North America; Wabash River. From the Paris Museum.

Trionyx ocellatus, *Lesueur, Wied, Voy. Amér. Sept.* iii. 242.
Trionyx annulatus, *Wied, Voy. Amér. Sept.* iii. 242.

Of all the animals of the family of *Chelonides*, they furnish the most delicious and nourishing food.—*Leconte.*

M. Wagler separates *Trionyx carinatus*, Geoff., into a section of his genus *Aspidonectes* distinct from *T. ferox*, and he regards *T. ferox*, *T. muticus* and *T. spiniferus* as three species.—*Syst.* 134.

e. Adult female. With a row of large spines in front of the disk. North America. Mr. W. Smith's Collection.

f. Adult male. Back of shell deformed, very high, almost conical; front edge of disk with a series of spines. North America.

g. Half-grown (stuffed). Front of disk with very small spines. North America. Mr. W. Smith's Collection.

In these three specimens (*e*, *f*, *g*) there is a greater space between the inner ends of the lateral callosities than in the one described by Pennant, but this may probably arise from their not being quite so adult.

The following species are very doubtful. The first appears to depend on a badly observed young specimen, and the latter most probably arises from the error of the artist and the describer.

10. Trionyx muticus. The Unarmed Trionyx.

Thorax much depressed, without any spinous tubercles on the front edge.

Trionyx muticus, *Lesueur, Mem. Mus.* xv. 257. t. 7.
Holbrook, N. A. Herpet. ii. 19. t. 2.
Leconte, Ann. Lyc. N. Y. ii. 95 (1830).
Gray, Syn. Rept. 46.
Gymnopus muticus, *Dum. & Bib. Erp. Gén.* ii. 482.

Hab. North America; North-western lakes and Western rivers. Mus. Paris.

"I cannot however as yet consider it perfectly distinct."—*Leconte.*

The Soft-scaled Turtle, *Bartram, Travels*, t. 2.
Trionyx Bartrami, *Daud. Rept.* ii. 74.
Leconte, Ann. Lyc. N. Y. iii. 95 (1830).
Tortue de Bartram, *Cuv. R. A.* ii. 15.
Testudo ferox verrucosa, *Schœpff. Hist. Test.* 96.
Chelys Bartrami, *Geoff. Ann. Mus.* xiv. 18.
Trionyx ferox β. verrucosa, *Schweig. Prod.* 286.

Hab. North America (*Bartram*).

Cuvier (*R. A.* ii. 15), I think, correctly, regards Bartram's figure as only a *T. ferox* to which the artist has given additional claws, and some appearance of dorsal shields, probably arising from the specimen having been partially dried, so as to show the bones through the skin.

4. DOGANIA.

Head large, broad behind. Muzzle elongate, conical. Lips thick. Dorsal shield flexible on the edge. Ribs 8–8, not united into a solid disk until late in life. Sternum narrow at each end; callosities 2, small, only attached to the outer processes of the front lateral sternal bones. Episternal lines forming a V, but not contiguous at their base. Tail very short.

Dogania, *Gray, Cat. Tort. B.M.* 49 (1844).
Gymnopus, sp., *Dum. & Bib. Erp. Gén.* ii. 497; *Cat. Méth. R.* 22.
Amyda, sp., *Schweigger.*
Amyda, *Fitz. Syst. Rept.* 30 (1843).
Aspidonectes, sp., *Wagler, Syst.* 134.

1. Dogania subplana. The Dogania. Tab. XXXIII.

Shell flattened; disk varied with yellow, with brown vermiculations. Head yellow-varied; sternal tubercles 2, small, lateral.

Dogania subplana, *Gray, Cat. Tort. B.M.* 49.
Trionyx subplanus, *Geoff. Ann. Mus.* xiv. 11. t. 5. f. 2.
Schweig. Prod. 289.

Trionyx subplanus, *Gray, Syn.* 48; *Illust. Ind. Zool.* t. *Schlegel, Faun. Japon.* 34.
Gymnopus subplanus, *Dum. & Bib. Erp. Gén.* ii. 497; *Cat. Méth. R.* 23.
Amyda subplana, *Fitz. Syst. Rept.* 30.
Hab. Japan.

a. Half-grown (dry). Sternal tubercles 2, very indistinctly indicated, narrow. Presented by Gen. Th. Hardwicke.

b. Half-grown (in spirits). Head brown, minutely white-dotted, with a narrow brown streak from each nostril to the eye, and with some very indistinct brown lines on the crown; lip brown, with larger white spots. Back brown, very indistinctly white-dotted. Japan. From Mus. Leyden.

§§ *Head elongate; face very short; eyes anterior.*

5. CHITRA.

Head very depressed, large, dilated behind. Muzzle very short, broad. Lips very thick. Shield flexible on the edge. Ribs 8–8. Vertebral bones distinct, narrow. Sternum narrow at each end. Sternal callosities 4. Episternal lines elongate, far apart, nearly parallel. Skull much elongated and depressed.

Chitra, *Gray, Cat. Tort. B.M.* 49 (1844).
Gymnopus, sp., *Dum. & Bib. Erp. Gén.* ii. 491; *Cat. Méth. R.* 22.
Cantor, Cat. Rept. Malay. 10.

1. Chitra Indica. The Sewteree.

Shield much depressed, with a narrow longitudinal central depression; the anterior vertebra broad, crescent-shaped; anterior sternal bones short; lateral callosities oblong, four-sided, with parallel sides; hinder triangular, front edge straight.

Chitra Indica, *Gray, Cat. Tort. B.M.* 49.
Trionyx Indicus, *Gray, Syn. Rept.* 47.
Trionyx Ægyptiacus, var. Indicus, *Gray, Illust. Ind. Zool.* i. t. 80.
Testudo Chitra, *B. Hamilton, Icon. ined.*
Gymnopus linestus, *Dum. & Bib. Erp. Gén.* ii. 491; *Cat. Méth. R.* 22.
Hab. India; Ganges; Philippines.

c, d. Half-grown and young. The inner edge of lateral callosities slightly diverging in front; anterior sternal bones narrow, elongate. India. Capt. Boys' Collection.

a. Adult (stuffed). Philippine Islands. From Mr. Cuming's Collection.

b. Very young (in spirits). Olive; front of shield covered with close round subconic warts. Head olive, minutely black-dotted; throat olive, minutely white-dotted. Philippine Islands.

Osteology. Tab. XLII.

c. Skull and os hyoides (very large). Nepaul. Presented by H. Falconer, M.D.

The shells of the living specimens are remarkably depressed and smooth; above, greenish-olive, vermiculated and spotted with brown or rust colour; beneath greenish-white.

"At Pinang this species is frequently taken in the fishing stakes. The Chinese inhabitants greatly relish this, as well as *Tyrse Javanica*, as articles of food. Individuals weighing 240 lbs. occur in the Ganges, and others of gigantic dimensions are not uncommon at Pinang. It is very powerful and of ferocious habits. The largest individual measured:—Head 6; neck 5; shell 37; tail 4 inches."—*Cantor.*

B. Pinnata. *Feet pinnate.*

Chelone (Chelonia), *Brongniart, Bull. Soc. Philom.* [illegible] *Duméril, Zool. Anal.* (1806).
Chelonii, *Oppel, Reptilien* (1811).
Chelones ou Tortues marines, *Daud.*
Les Tortues de mer, *Daubenton, Ency. Méth. Circ. R. A.* ii. 12, ed. 2, ii. 13.
Sea Tortoises or Turtles, *Shaw, Zool.*
Testudines marinæ, *Plin. H. N.* ix. c. 20; xxxii. c. 4.
Testudinata pinnata, *Merrem, Tent.* 17.
Bell, Zool. Journ. iii.
Testudines oiacopodes, *Wagler, Syst. Amph.* 133 (1820).
Eretmochelones, *Ritzen, Nov. Act. Acad. Nat. Cur.* xiv. 269 (1828).
Thalassites ou Tortues marines, *Dum. & Bib. Erp. Gén.* ii. 506; *Cat. Méth. R.* 21.

Fam. V. CHELONIADÆ (Turtles).

Head globose, shielded; nostrils rather tubular. Beaks horny, naked. Neck short, subretractile. Feet very long, not retractile, compressed, fin-shaped; toes depressed, expanded at the end, and often armed with flat claws; front feet longest. Tail short, thick.

Shell low, cordate, with a defined bony margin, covered with horny shields or a leathery skin. Ribs free at the end. Sternum ring-like, cartilaginous in the centre, and only united to the thorax by a cartilaginous suture.

Seas of torrid and temperate zones: some eating algæ, as *Ch. Midas*, which are used for food, and imported as a luxury; others, molluscs and radiated animals, as *Ch. Ca-*

TESTUDO PLANICEPS

1a

1b

1c

1d

2b

2c

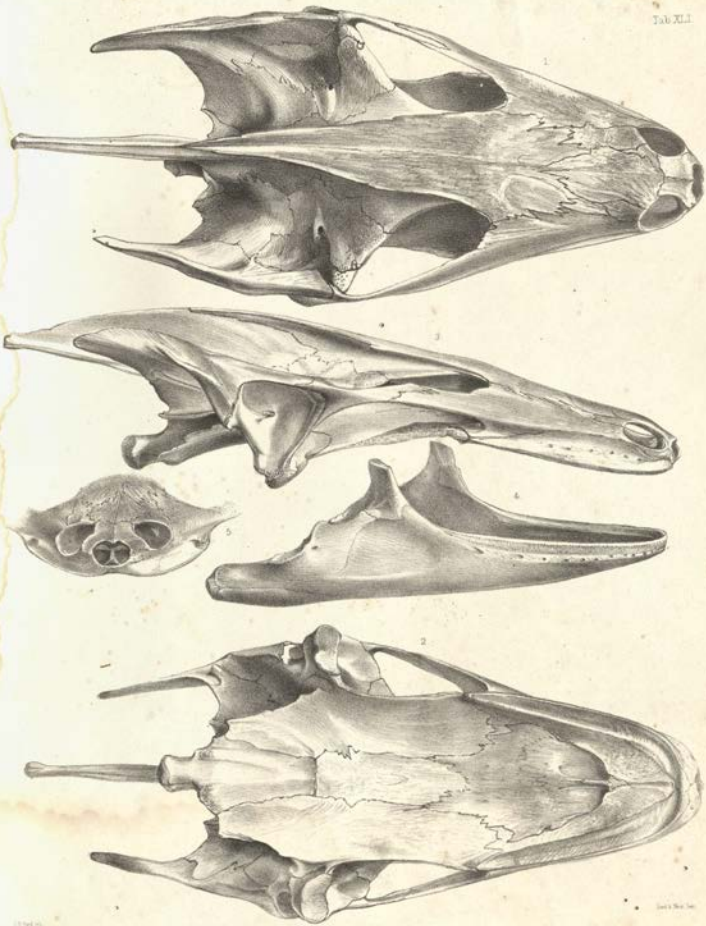
2a

3b

3c

3a

TESTUDO INDICA, young. 2 TESTUDO TABULATA. 3 EMYS ...?



CHITRA INDICA

retta, only collected for their oil. The horny shields are used for ornamental purposes.

Chelonidæ, *Gray, Ann. Phil.* x. 212 (1825).
Chelonidæ, *Swainson, Lard. Cyclop.* 344.
Bonap. Saggio Anim. Vert. 13 (1832); *Tab. Analyt.* 11 (1836).
Carettoides, *Fitzinger, Neue Class.* (1826).
Sphargidæ, *Gray, Ann. Phil.* x. 212.
Chelonieæ, *Fitz. Syst. Rept.* 30.
Chelonæ, *Wiegmann & Ruthe, Handb. Zool.* 164.
Dermatochelydæ, *Fitz. Syst. Rept.* 30.
Chelonitæ oiacopodæ, *Wagler.*
Fitz Syst. Rept. 30.
Halichelones, *Ritzen, Nov. Act. Acad. Nat. Cur.* xiv. 269 (1828).
Chelonea (*b*), *Fleming, Phil. Zool.* ii. 270 (1822).
Chelonia (Tortues de mer), *Bronyn.*
Cuv. R. A. ii. 12.
Oppel, Rept. (1811).
Caretta et Sphargis, *Merrem, Tent.* 17.

Synopsis of the Genera.

a. *Shell covered with a coriaceous skin.* Sphargina.

1. **Sphargis.** Shell covered with a coriaceous skin. Claws none.

b. *Shell covered with horny shields.* Chelonianina.

2. **Caouana.** Shell covered with 15 or more horny, truncated, not imbricate shields, which are strongly keeled in the young. First and second toes clawed.

3. **Caretta.** Shell covered with 13 horny shields, imbricate and produced behind. Sternum strongly keeled on each side in all ages. First and sometimes the second toe clawed.

4. **Chelonia.** Shell covered with 13 truncated, not imbricate, horny shields, smooth in all ages. First finger of each fin clawed.

a. *Shell covered with a coriaceous skin.* Sphargina.

Sphargidæ, *Gray, Ann. Phil.* x. 212 (1825).
Bell, Zool. Journ. iii. 516 (1828).
Dermatochelydæ, *Fitz. Syst. Rept.* 30.
Sphargidina, *Bonap. Saggio Anim. Vert.* 13 (1832); *Tab. Analyt.* 11 (1836).
Dermatochelys, *Blainv. Bull. Soc. Philom.* (1816); *Journ. de Phys.* (1816).
Wagler, Syst. 133 (1830).
"*Lesueur,*" *fide Cuv. R. A.* ed. 2. ii. 14.
Mydæ, *Ritzen, Nov. Act. Acad. Nat. Cur.* xiv. 269 (1828).

1. SPHARGIS.

Shell cordate, depressed, deeply longitudinally grooved, covered with a continuous coriaceous skin. Feet long. Claws replaced by small coriaceous scales. Beaks strong; upper with a very distinct notch on each side of the broad central notch.

Sphargis, *Merrem, Tent.* 19.
Gray, Ann. Phil. x. 212 (1825).
Bell, Zool. Journ. iii. 516 (1828).
Wiegmann & Ruthe, Handb. Zool. 164.
Dum. & Bib. Erp. Gén. ii. 560; *Cat. Méth. R.* 25.
Coriudo, *Fleming, Phil. Zool.* ii. 271 (1822).
Harlan, Amer. Rept.
Dermatochelys, *Blainv. Dict. Sc. Nat.*; *Journ. de Phys.* (1816); *Bull. Soc. Philom.* (1816).
Fitz. Syst. Rept. 30.
"*Lesueur,*" *Cuvier.*
Wagler, Syst. 133 (1830).
Scytina, *Wagler.*

1. Sphargis coriacea. The Luth.

Thorax ovate, cordate, sharply three-keeled.

Sphargis coriacea, *Gray, Syn. Rept.* 51.
Dum. & Bib. Erp. Gén. ii. 560. t. 24. f. 2; *Cat. Méth. R.* 25.
Holbrook, N. A. Herpet. ed. 2. ii. 45. t. 6.
De Kay, N. York, 4. t. 5. f. 9.
Storer, Massach. Rept. 207. t.
Testudo coriacea, *Linn. Syst. Nat.* 350.
Schneid. Schildk. 312.
Latr. Rept. i. 58, t. 2. f. 1.
Shaw, Zool. t. 18. f. 1.
Lacép. Q. O. i. t. 3.
Coriudo coriacea, *Harlan, Amer. Rept.* 85.
Testudo Lyra, *Donud.*
Sphargis Mercurii, *Rond. De Pisc. Mar.* t. 5. f. 3.
S. mercurialis, *Merrem, Tent.* 19.
Temm. F. Japon. 6. t. 1–3.
Gray, Ann. Phil. x. 212.
Dermatochelys atlantica, *Lesueur, Cuv. R. A.* ii. 14.
Testudo tuberculata, *Penn. Phil. Trans.* lxi., young.
Schoepff. Test. t. 29.
Gravenh. Delic. t.
Spinose Tortoise and Tuberculated Tortoise, *Penn.*
Coriaceous Turtle, *Shaw.*

Hab. Mediterranean; Atlantic Ocean (*rare*); Cape of Good Hope (*Horsfield*); Chili (*Molina*); North America (*Lesueur*); Japan, called *Jafafa* (*Siebold*).

Young.—Thorax black, covered with a coriaceous skin, divided into numerous small polygonal scales; back with seven white longitudinal ridges; belly white, with rather larger regular small polygonal shields; fore-feet nearly as long as the shell, white-edged.

Testudo tuberculata, *Gravenh. Delic.* t.
Phil. Trans. lxi. f. 4, 5.
Schoepff. Test. t. 29.
Dermatochelys porcata, *Wagler, Syst.* 133. t. 1. f. 1, 23.
Fitz. Syst. Rept. 30.

a. Stuffed (adult). England; coast of Dorsetshire.

b. Stuffed (adult; not in good state). West Indies; Nevis. Presented by W. Cottle, Esq.

c, d. In spirits (young).

Rondeletius (*De Pisc. Mar.* 451) thought that it was from the bones of this animal that the ancients formed their lyres, and for this reason it was called the Luth by Lacépède; but the remains of the Greek lyre in the British Museum are evidently formed from bones of *Testudo græca*.

A skull labelled *T. coriacea*, from the Pacific Ocean, presented by Mr. Collie to the Haslar Museum, is so like that of *C. Midas*, as not to be distinguished from it; the hole of the ear appears rather rounder than in the other skull, but very slightly so.

b. Shell covered with horny shields. Chelonina.

Chelonidæ, *Gray, Ann. Phil.* x. 212 (1825).
Bell, Zool. Journ. iii. 516 (1828).
Chelonieæ, *Wiegmann & Ruthe, Handb. Zool.* 165.
Fitz. Syst. Rept. 30.
Chelonina, *Bonap. Saggio Anim. Vert.* 13 (1832); *Tab. Analyt.* 11 (1836).
Caretta, *Merrem, Tent.* 17.
Carettæ, *Ritzen, Nov. Act. Acad. Nat. Cur.* xiv. 269 (1828).
Chelonia, *Wagler, Syst. Rept.* 133.
Dum. & Bib. Erp. Gén. ii. 538.
Chelone, *Ritzen, Nov. Act. Acad. Nat. Cur.* xiv. 269 (1828).

* *The inner surface of the upper and lower jaws simply concave; shields thin, rather membranaceous, brittle. Young three-keeled.*

2. CAOUANA.

Thorax ovate, cordate, covered with fifteen thin, truncated, not imbricated shields, which are keeled in the young. Head large. Jaws slightly curved towards each other at the tip; side of the lower jaws covered with angular plates. Marginal plates 27 (rarely 25). Carnivorous, eating mollusca and crustacea.

Young three-keeled.

The additional pair of discal shields occupies the side of the narrow first vertebral shield, the three covering the space occupied by the broad front vertebral shield of *Chelonia*.

Caouana, *Gray, Ann. Phil.* x. 21 (1825); *Cat. Tort. B.M.*
Thalassochelys, *Fitz. Syst. Rept.* 30 (1843).
Halichelys, *Fitz. Syst. Rept.* 30.
Lepidochelys, *Fitz. Syst. Rept.* 30.
Caretta, sp., *Merrem, Tent.* 18.
Chelonia β, sp., *Wagler, Syst.* 133.
Chelonées Caouanes, *Dum. & Bib. Erp. Gén.* ii. 552; *Cat. Méth. R.* 25.
Thalassochelys, *Fitz. Syst. Rept.* 30.

The skull (*Cuv. Oss. Foss.* t. 11. f. 1–4) broad, short; forehead flat, shelving, with the nose on the slope of the face; the inner surface of the bones of the jaws smooth (the ridges being on the horny sheath). The pterygoids are broad, concave, with a deep diverging groove on each behind, edging the very narrow linear ridge-like triangular part of the body of the sphenoid, which has part of the basilary between it. Last vertebral bone narrow, elongate, thick-keeled, of nearly the same width the whole length.

The outer edge of the pterygoid bones is produced into a lobe in the middle: this lobe appears to diminish in size as the skull reaches adult age.

The frontal (*Cuv. Oss. Foss.* t. 11. f. 2 *f*) does not appear to increase in size so rapidly as the other bones, being larger in comparison in the young than in the adult skulls.

1. Caouana Caretta. The CAOUANNE or LOGGERHEAD.

Claws two on each foot; back convex, rounded, toothed behind; vertebral plates six-sided, keeled, rather longer than wide; caudal plate squarish, longer than broad, hinder marginal plate rather wider than the rest; costal shields of young keeled above.

Caouana Caretta, *Gray, Cat. Tort. B.M.* 52.
Testudo Caretta, *Linn. Syst. Nat.* 351.
Walb. Chelon. 4. 95.
Schoepff. Test. t. 16 & 16 B, t. 17. f. 3.
Shaw, Zool. ii. t. 23–25.
T. cephalo, *Schneid. Schildk.* 303.
Temm. Faun. Japon. 25. t. 4. f. 1, 2; t. 6. f. 3.
T. Caouana, *Bechst. in Lacép.* i. 110.
Daud. Rept. ii. 54. t. 16. f. 2.
Chelonia Caouana, *Schweig. Prod.* 292.
Wagler, Syst. 133. t. 1. f. 1. 23.
Gray, Syn. Rept. 53.
Dum. & Bib. Erp. Gén. ii. 544; *Cat. Méth. R.* 25.
Holbrook, N. A. Herpet. ii. 33. t. 4.
Ch. virgata, *Wagler, Icon.* t. 29 (not *Cuv.*).
Ch. pelagicorum, *Valenc. Rept. Morea*, t. 10.
Testudo corticata, *Rondel.*
T. marina Caouanna, *Ray, Quad. Ovip.* 257.
The Loggerhead Turtle, *Brown, Jam.* 465.
Catesby, Carol. ii. 40. t. 40.
La Caouanne, *Labat, Voy. Amér.* i. 184. 311.
Lacép. Q. O. i. 96.
Test. nasicornis, *Lacép.*
Edw. Birds, t. 206.
Rhinoceros Turtle, *Shaw, Zool.* t. 14, very young.
Thalassochelys Caouana, *Fitz. Syst. Rept.* 30.

Young black; back three-keeled; central highest.

Hab. Atlantic Ocean; Azores; Messina; Morea; Martinique; Rio Janeiro.

a. Half-grown (in spirits). Costal shield keeled above, margin toothed; not in good state. Sloane Collection.

c. Adult (stuffed). Back covered with *Chelonobia*; hinder marginal plates less acute; caudal plate elongate, subtriangular. Atlantic Ocean. Modelled in the Pediment of the Museum.

d. Half-grown (stuffed). Hinder marginal plates acute, rather produced; caudal scarcely elongated. Atlantic Ocean.

g. Half-grown (stuffed).

h. Half-grown (stuffed).

j. Very young (in spirits). Black; centre of upper and hinder edge of lower beak, the prominences of the sternal shields, and a very narrow margin to the marginalshields, whitish.

m. Young (in spirits). Lost the greater part of dorsal plates.

OSTEOLOGY:—

Cuv. Oss. Foss. v. 187. t. 11. f. 1–4, skull; t. 12. f. 43, os hyoides; t. 12. f. 5.
Wagler, Syst. Amph. t. 1. f. 3, 4.

b. Half-grown (dorsal shield only).

e. Skull (very large). Costal shields smooth. India? Presented by Thomas Bell, Esq.

Chelonia Rüppellii, *Gray, B.M.*

f. Half-grown. Back and belly shielded. Coast of Devonshire. Presented by J. Wilson, Esq.

Testudo Caretta, *Mag. N. H.* new ser. iv. 136.

i. Half-grown (upper shield only).

k. Half-grown skeleton (mounted).

l. Skull. Ceylon. Presented by Dr. J. Davy.

2. Caouana olivacea. The OLIVE CAOUANNE.

Claws one on each foot; marginal shields 27; back flat, sides rather concave, side edges expanded, slightly bent up; vertebral plates narrow, elongate, longer than wide; vertebral shields very sharply keeled; caudal plate subtriangular, longer than broad, much larger than the other marginal plates; head moderate.

Caouana olivacea, *Gray, Cat. Tort. B.M.* 53.
Chelonia olivacea, *Eschscholtz, Zool. Atl.* t. 3.
Cantor, Cat. Rept. Malay. 13.
Lepidochelys olivacea, *Fitz. Syst. Rept.* 30.
Thalassochelys olivacea, *Fitz. Syst. Rept.* 30.
Ch. caouana, var., *Gray, Syn.* 54.
Ch. Duraumieri, *Dum. & Bib. Erp. Gén.* ii. 557; *Cat. Méth. R.* 25.
Ch. subcarinata, *Rüpp. MS. Mus. Francf.*?
Hab. Indian Ocean; Malabar; Philippines.

a. Very young (in spirits). Dark brown; neck, fins, and under side paler brown; without any narrow anterior vertebral plate (the two united?). Philippine Islands.

b. Stuffed (adult). With a narrow anterior vertebral plate.

"*Young.* Above blackish-olive, lighter than in the adult; shell and fin edges with pale yellow. Sternum pale greenish-yellow, washed with chestnut; areola blackish.

"*Adult.* Head brown; shell blackish-green, some of the marginal scales of the fins yellow. Sternum yellow, washed with chestnut; 27 marginal shields; fin with one nail.

"The shell is broad, subcordiform, its length exceeding its breadth by $\frac{1}{12}$, three-keeled, the vertebral keel strongest, dentated behind; marginal shields 27, obliquely placed, the first and fourth pairs of costals and the fourth vertebral shield each divided into two pieces.

"The flesh of the *Chelonia olivacea*, though relished by the Chinese settler in Pinang, is unpalatable to Europeans." —*Cantor.*

3. Caouana elongata. The LONG CAOUANNE.

Shell elongate, rather flattened in the middle, convex on the sides, and slightly dilated and flattened upon the side and contracted on the hinder edges; marginal plates 27, last pair much longer; caudal plates square, large, much longer than broad; vertebral plates elongate, six-sided, half as long again as broad. Claws ——? Head ——?

Caouana elongata, *Gray, Cat. Tort. B.M.* 53.
Hab. ——?

a. Shell only (adult).

** *The inner surface of the jaws with an angular subcentral ridge on the upper, and a sharp ridge on the inner edge of the lower one. Shields thick, horny, brittle, imbricate. Young three-keeled.*

3. CARETTA.

Thorax ovate, cordate, three-keeled, covered with 13 thick, horny, keeled plates, which are produced and imbricate on their hinder edge. Muzzle elongate, compressed. Beaks moderate, upper edge straight, toothless, lower slightly recurved; side of lower beak with a single elongated shield. Sternum keeled on each side. Fins each with 2 claws. Palate concave, broad, narrow behind; front of upper jaw with a single central ridge; lower concave, with rather strong ridges on the inner edge. The last vertebral bone broad, short, half-ovate, about as long as wide at the base.

Caretta, *Gray, Cat. Tort. B.M.* 53 (1844).
Chelonia (Eremochelys), *Fitz. Syst. Rept.* 30.
Caretta, sp., *Merrem, Tent.* 17.
Chelonia (2), *Wagler, Syst.* 133.
Chelonées imbriquées, *Dum. & Bib. Erp. Gén.* ii. 547; *Cat. Méth. R.* 24.

1. Caretta imbricata. The CARET.

Shell subcordiform, yellow, brown-marbled; back keeled, shelving, strongly toothed behind.

Caretta imbricata, *Gray, Cat. Tort. B.M.* 53.
Chelonia imbricata, *Schweig. Prod.* 291.
Gray, Syn. 25. t. 7. f. 2.
Dum. & Bib. Erp. Gén. ii. 547. t. 13. f. 2; *Cat. Méth. R.* 24.
Temm. Faun. Japon. 13. t. 5. f. 12, t. 6. f. 4.
Cantor, Malay. Rept. 13.
Holbrook, N. A. Herpet. ii. 39. t. 5.
Testudo imbricata, *Linn. Syst. Nat.* 350.
Schneid. Schildk. 309.
Shaw, Zool. iii. t. 26, 27.
Daud. Rept. ii. 39.
Schoepff. Test. t. 18 A. B; t. 17. f. 1, young.
T. Caretta, *Knorr, Delic.* ii. 124. t. 50.
Chelonia multiscutata, *Kuhl, Beytr.* 78, monstrosity?
Ch. pseudo-Caretta, *Lesson, Voy. Bél.* 302.
The Scaled Tortoise, *Grew, Mus.* 38. t. 3. f. 4.
Seba, i. t. 80. f. 9.
Eretmochelys imbricata, *Fitz. Syst. Rept.* 30.

Hab. Indian Ocean; Amboyna; New Guinea; Seychelles; Havanna; Red Sea.

a, b. Half-grown (stuffed). Shell elongate, narrow.
d. Young (stuffed). Shell broad.
f. Very young (stuffed). Wants one fin.
g. Adult (stuffed). M. Parzudaski's Collection.
h. Adult (stuffed). Raines' Island. Presented by Capt. John William Ince, R.N.
i. Half-grown (stuffed). Mr. Tucker's Collection.
j. Half-grown (stuffed).
k. Young (stuffed). Shell narrow. From Haslar Hospital.
l. Young (stuffed). From the Zoological Society.

OSTEOLOGY:—
c. Half-grown (upper shield only).
e. Lower shield of young.
m. Skeleton. The Paris Museum.
n, o, p, q. Adult (upper shield only). Back of Barn Island.

Head brown, scales edged or rayed with yellow. Shell yellow, marbled or rayed with rich brown. Sternum yellowish-white.

"In the *young* the areola of the sternal shield black."—*Cantor.*

"The Caret or Hawkbill Turtle is called Kookeeloo or Kooseomboo by the Cingalese. It is caught on the southern coast of the island (Ceylon), and is very abundant at Point de Galle and Matura. It is rare on the northern part of the const. Some specimens are sold for as much as £4; the price depends on the quality of the shell (shields). It is said that the natives remove some of the shields while the animal is alive, and return it to the sea; the shields are said to be reproduced, but for the truth of this we cannot vouch. The natives eat the flesh of this Turtle, but it is unpalatable to Europeans."—*Kelaart, Reptiles of Ceylon*, 181.

*** *The inner surface of the upper and lower jaws with an acute ridge, concentric with the outer edge of the upper and inner of the lower jaw. Shield horny, thick, not imbricate. Young not keeled.*

4. CHELONIA.

Discal shields 13, not imbricate, truncated behind. Muzzle short, rounded. Jaws moderate, upper slightly notched in front, and feebly toothed on the side, lower denticulated, with a single elongate plate upon each side. The front toe of each fin clawed. Feeding on *algæ*.

Chelonia, *Fleming, Phil. Zool.* ii. 271 (1822).
Gray, Ann. Phil. x. 212 (1851); *Cat. Tort. B.M.* 54.
Bell, Zool. Journ. iii. 516.
Fitz. Syst. Rept. 30.
Chelonia, sp.
Chelonia β, sp., *Wagler, Syst.* 133.
Caretta, sp., *Merrem, Tent.* 18.
Chelonées franches, *Dum. & Bib. Erp. Gén.* ii. 538; *Cat. Méth. R.* 24.

Beaks not hooked; upper jaw with two arched ridges, the inner one slightly marginal, the outer one near the margin, and interrupted by a deep pit in front; of lower jaw strongly toothed on the edge, with a strong subcentral ridge, with a large conical prominence in the middle, and a deep pit on each side in front of it.

The pterygoids concave, much contracted on each side, in the middle broad; they and the flattened expanded triangular part of the sphenoid form a broad concave space on the back of the palate.

† *The vertebral bones behind the last rib transverse, broad in front, divided by two cross sutures.*

Chelonia § *a, Gray, Cat. Tort. B.M.* 54.

1. Chelonia virgata. The CAREY.

Shell short, subtectiform, chestnut, varied with yellow and rayed with brown; sides strongly arched.

Chelonia virgata, *Schweig. Prod.* 291.
Cuv. R. A. ii. 41.

Chelonia virgata, *Guér. Icon.* t. 1. f. 4.
Dum. & Bib. Erp. Gén. ii. 541 (not *Wagler*); *Cat. Méth. R.* 24.
Sagra, Cuba Rept. 26. t. 3.
Ch. Midas D, *Gray, Syn.* 52.
" Ch. fasciata, *Cuvier*," *Schlegel, F. Japon.* 26.
Schoepff. Test. t. 16 B.
Bruce, Voy. t. 42.
Chelonia maculosa, *Cuv. R. A.* ii. 13.
Dum. & Bib. Erp. Gén. ii. 544; *Cat. Méth. R.* 24.
C. lacrymata, *Cuv. R. A.* ii. 13.
C. Midas, var. β, *Gray, Syn. Rept.* 32.
C. marmorata, *Dum. & Bib. Erp. Gén.* ii. 546. t. 23. f. 1; *Cat. Méth. R.* 24.
Shaw, Zool. ii. 13. t. 22, var.

Hab. Indian Seas; Cape of Good Hope; New Guinea.

f. Half-grown (stuffed). Wants some plates. Dr. Mantell's Collection.

OSTEOLOGY:—

a. Young (upper shield only). Vertebral shields broader than long. Atlantic Ocean. Presented by W. Eling, Esq.

b. Adult (stuffed). Vertebral shield longer than broad. South America.

c. Half-grown (upper shield only). Vertebral shields rather longer than broad. South America?

d. Half-grown (upper shield). Vertebral shield rather broader than long.

e. Half-grown (upper shield). Vertebral shield as broad as long. From Haslar Hospital.

h. Adult. Upper shield very dark-coloured.

g. Half-grown skeleton.

Young? Black or greenish-olive; chin, under side, broad edge of shell and fin, and the base of the hinder fin, white.

a. Very young (stuffed). Margin of the shell and fin white. China. Presented by J. R. Reeves, Esq.

b. Very young (in spirits). Neck whitish.

c, d, e. Very young (in spirits).

f, g, h. Very young (in spirits).

i. Very young (stuffed). From the Zoological Society.

"*Young.* Head, shell and fins greenish-black; margin of the shell and fins and sternum white.

"*Adult.* Head and fins chestnut, scales edged with yellow. Shell greenish-yellow, with chestnut rays and spots. Sternum gamboge or greenish-yellow.

"This species, the 'Pinyu' of the Malays of Pinang, is at all seasons plentifully taken in the fishing stakes in the Straits of Malacca, and is the 'Green Turtle' of the European inhabitants of our Malayan settlement and of the seaports of India. In size it equals *Chelonia Midas*, Schweig. (of the Atlantic), which it rivals in flavour. About December and January is the season when the female deposits her eggs in the sandy beach of some sequestered island, and then the fishermen watch during the moonlight nights to 'turn turtles.' The eggs are of a spherical shape, about one inch in diameter, covered with a soft semitransparent membrane of a pale yellowish colour. The expert eye of the fisherman baffles the pains with which the turtle conceals her eggs, and prodigious numbers are disinterred. They are very rich-flavoured, like marrow, and will keep for weeks although exposed to the air."—*Cantor.*

"The breadth of the fronto-nasal shield in *Chelonia virgata* is only one-third of the length, whereas in *Chelonia Midas* it is one-half, and these proportions appear to be constant in all ages of the two species. The very young of both greatly resemble each other in colour and shape. Six living young were all of the following dimensions:—Head $\frac{2}{3}$; neck $\frac{1}{2}$; shell 2; tail $\frac{1}{2}$ of an inch; and they presented the following peculiarities:—

"The shell cordiform, the length exceeding the breadth by one-eighth; the second vertebral shield much broader than the first, and altogether the largest of the series; the second costal shield larger than the third; the breadth of the fronto-nasal shield one-third of the length. Each fin with a single claw."—*Cantor.*

"This Turtle (*Chelonia virgata*) is found all round the island (Ceylon), and is very numerous in the Trincomalie Harbour for several months in the year; a good-sized one can be bought for 6*d*., a very large one for 1*s*. 6*d*. to 2*s*. The flesh of this Turtle is not far behind in flavour that of the well-known Green Turtle (*Chelonia Mydas*), so famous for making *the* Turtle soup. The female lays from 100 to 200 eggs of a globular shape, with a soft semitransparent calcareous shell, which are much prized as articles of food by natives and Europeans. A native will consume as many as 20 or 30 eggs at one meal, and we have seen Europeans eat a dozen for breakfast."—*Kelaart, Reptiles of Ceylon*, 181.

†† *The vertebral bones behind the last rib narrow, linear or vase-shaped, attenuated behind.*

Chelonia §**, *Gray, Cat. Tort. B.M.* 54.
Chelonia, *Fitz. Syst. Rept.* 30.

2. Chelonia viridis. The GREEN TURTLE.

Shell subrotundiform, rather elongate, olive-green, when

dry fulvous, with brown spots; back rounded; vertebral shields hexagonal, nearly as long as broad.

Chelonia viridis, *Temm. Faun. Japon.* 18. t. 4. f. 4–6; t. 6. f. 1, 2.
Testudo viridis, *Schneid. Schildk.* 309. t. 2.
Testudo Mydas, *Latr. Rept.* i. 22. t. 1. f. 1.
Daud. Rept. ii. 10. t. 16.
Schoepff. Test. t. 17. f. 2.
Chelonia Midas, *Schweig. Prod.* 291.
Gray, Syn. 52.
Dum. & Bib. Erp. Gén. ii. 538.
Holbrook, N. Amer. Herpet. ii. 25. t. 3.
Caretta esculenta, *Merrem, Tent.* 18.
Testudo Japonica, *Thunb.*
Testudo Thunbergii, *Merrem, Tent.* 19.
T. Cépédienne, *Daud. Rept.* ii. 50. t. 17. f. 1.
Chelonia Mydas, *Gray, Ann. Phil.* x. 212.
Chelonia esculenta, *Wiegm. & Ruthe, Handb. Zool.* 164.

Hab. Atlantic Ocean; North America; Rio Janeiro; Ascension; Guiana; India; Bourbon; New Holland.

a, b. Half-grown (stuffed). Brazils.

Osteology:—

Chelonia ——?, *Cuv. Oss. Foss.* v. t. 13. f. 2, 3, back; y. 206. t. 13. f. 6, sternum; t. 12. f. 15 & 39, hand and foot.
Testudo mydas, *Spix, Cephal.* t. 1. f. 5; t. 2. f. 5, skull.
Caouane, *Bojanus, Parergon.* f. 192–195.

c. Skull of young; weighed 66 lbs. From Dr. Mantell's Collection.

d. Head, with the shields.

e, f. Skulls of adult; weighed 375 lbs. Ascension. Presented by — Wauds, Esq.

g. Skull of adult. Imperfect: discoloured.

Young? Blackish-brown, keeled; chin, under surface and narrow edge of shell and fins brownish-white.

a, b, c, d. Very young (in spirits). Ascension. Presented by Capt. Sir Edward Belcher.

e. Very young (in spirits). Sternal plates 6. Ascension. Presented by Capt. Sir Edward Belcher.

f. Very young (in spirits). First vertebral plate irregular. Ascension. Presented by Capt. Sir Edward Belcher.

g, h. Very young (in spirits). Vertebral plates irregular, 6 or 7. Ascension. Presented by Capt. Sir Edward Belcher.

i. Very young (in spirits). Costal plates 5·5; last vertebral narrow. Ascension. Presented by Capt. Sir Edward Belcher.

j, k. Very young (in spirits). Plates normal. Ascension Island. From H.M.S. Chanticleer.

l. Very young (dry).

The skulls differ considerably in the convexity of the forehead, and they offer two distinct peculiarities, which may indicate two species or the two sexes.

In one form, of which I have examined four skulls of different ages, the width at the condyles of the upper jaw is the same as the distance from the edge of the vertebral condyle to the front edge of the palatine opening.

In the other variety, of which I have examined five, all adult, skulls, the width of the condyles of the jaw is considerably more (half an inch) than the above-named distance. In the *Chelonia Caretta* the width of this part is very much greater than the space above named.

I may observe that in the youngest skulls of the first variety the condyles are narrowest, so that part of this difference may depend on the age of the skulls, which appear to become broader and shorter as they become older.

APPENDIX.

Page 3, *add*—

Mr. John Leconte proposes a new arrangement of the Order into four great families. He observes: "I owe this arrangement in a great degree to the suggestions of my son."

Fam. I. Pedes penniformes. Sternum osse episternali postice producto. 1. *Chelonia*. 2. *Sphargis*.

Fam. II. Pedes compressi, ungulati. Sternum scuto singulo (abdominali) alato, alarum marginibus non inflexis.

A. Sternum osse episternali postice producto. 1. *Chelydra*. 2. *Staurotypus*. 3. *Trionyx*. 4. *Emyda*.

B. Sternum plus minus uni- vel bivalve; osse episternali maximo entosternali obsolete (in pullis rudimentali) alis a scuto abdominali solum projectis. 1. *Kinosternon*.

Fam. III. Pedes ungulati, plerumque compressi. Sternum scutis duobus alatis (pectorali abdominalique) alarum marginibus, excepta Cistudinæ fortiter inflexis scutis caudalibus duobus distinctis.

a. Sternum scutis 11 s. 12 tectum. Ungulus 5·5, 4·5, 4·4 vel 4·3. 1. *Emys*. 2. *Platysternon*. 3. *Teleopus*. 4. *Lutremys*. 5. *Cistudo*.

β. Sternum scutis 13 tectum. 6. *Chelys*. 7. *Chelodina*. 8. *Sternothærus*. 9. *Pentonyx*. 10. *Platemys*. 11. *Podocnemis*.

Fam. IV. Terrestres. Corpus scutatum. Sternum alatum, scuto laterali osseo, alarum marginibus fortiter inflexis. Pedes clavati, ungulati. Scutum caudale nunquam divisum vel stria superiore perpendiculari fortiter impressa quam in partes duas secari videtur. 1. *Testudo*. 2. *Pyxis*. 3. *Homopus*. 4. *Kinixys*.—*Proc. Acad. Nat. Sci. Philad.* vii. 1854.

1. Manouria fusca (p. 15), *add*—

Teleopus luxatus, Leconte, Proc. Acad. Nat. Sci. Philad. vii. 187, Oct. 1854.

"*Upper jaw with three rows of serrated teeth; the lower with two, the outer one the finest. Toes and claws 5·5; fore claws long and rather sharp; hind feet clavate. Claws nearly globular, the innermost one wide and flat, the edge rather sharp.*

"Inhabits Java; and must from its shape be terrestrial in its habits.

"It possesses a strange mixture of the characters of this family with those of the next."—*Leconte, l. c.* 187.

Geoclemys Seba (p. 18).

Dr. Kelaart believes that *Geoclemys Seba* (p. 18) is the young of *Emys trijuga* (p. 20), the difference in the form of the shell and the spotting on the head depending on the age of the specimens. I have never seen the young *E. trijuga*, the adult *G. Seba*, nor any specimens in an intermediate state of growth. I may observe that the fore feet of *Emys trijuga* show its affinity to the genus *Geoclemys*, though the skull is that of an aquatic *Emys*.

16. Emys Holbrookii (p. 25), *add*—

a. Adult (in spirits). North America; Mississippi. Mr. Brandt's Collection.

The lower jaw rather flattened.

To doubtful North American *Emydes* (p. 28), *add*—

24*. Emys nigra.

Emys nigra, *Hallowell, Proc. Acad. Nat. Sci. Philad.* vii. 96 (1854).

"Shell oblong ovate, slightly compressed at the sides and emarginate, but not distinctly serrated posteriorly; latero-posterior margins of carapace everted; nuchal plate narrow, truncate anteriorly, broader posteriorly; 24 marginal plates, the two posterior more or less quadrilateral, the two adjoining pentagonal. Colour blackish above, the upper part of the head and neck presenting numerous very small yellow spots upon a black ground; anterior extremities with a tinge of yellow; under jaw and throat yellow, with dark-coloured markings; plastron yellow in the middle, with large blotches of black and dark brown at the sides and

anteriorly and posteriorly; under surface of tail and extremities thickish; tail of moderate length.

Hab. Lower California; Possa Creek.

Length of carapace 6½ inches."—*Hallowell.*

M. Leconte observes: "In the English Catalogue (of the British Museum) are described *E. rivulata*, *E. scripta*, *E. Holbrookii*, *E. macrocephala* and *E. Bennettii*. Not having these, and *knowing* that the descriptions must have been taken from dried and faded specimens, or from such as were bleached by long immersion in alcohol, I do not hesitate to pronounce them as having no real existence as distinct species, or at most as being slight variations from others well known and long ago determined."—*Proc. Acad. Nat. Sci. Philad.* vii. 190.

The figures in this work will show the evil of making such general assertions without examining the specimens on which the species are founded, and also that not one of them was described from either faded or bleached specimens.

26. Emys geographica (p. 29), *add*—

b. Adult (in spirits). Head with symmetrical concentric yellow lines; frontal streak distinct; temporal spot triangular, distinct. Shell olive, with several rather irregularly disposed irregular-shaped narrow pale rings, united by anastomosing pale lines on each shield; the marginal plates with anastomosing angular narrow lines; back bluntly keeled, the keel becoming narrower and more continued behind. Sternum yellow, with a dark margin to the inner edge of the hinder shields, and dark edges to the sterno-costal symphysis and the axillary and inguinal plates; the under side of the margin yellow, with a small oblong annulated spot on the hinder outer angle of the shield, and a small arched streak on the outer part of the front edge, completing the outline of the spot on the preceding shield, so as to render the spot subsutural, thus showing a passage to the species of the preceding division. North America; Lake Champlain. Mr. Brandt's Collection.

"Clemmys reticulata, *Dum. & Bib.*"

This specimen agrees with Dr. Holbrook's figure of *Emys geographica*.

27. Emys pseudogeographica (p. 29), *add*—

d. Half-grown (in spirits). The markings on the dorsal shield indistinct until the shields are removed. Sternum dark varied, and with broad dark margins to the shields; the lateral processes and the sterno-dorsal symphysis with dark-edged pale irregular streaks. Head and throat with numerous narrow crowded black streaks. North America; Mississippi. Mr. Brandt's Collection.

"Emys geographica, *Fitz.*"

30. Emys rugosa (p. 31), *add*—

e. Adult (in spirits). Head olive-dotted and vermiculated with black, with a broad unspotted streak from the back of the orbit over the temple; throat blackish streaked. Shell olive above, bright red beneath, with a broad black edge to all the plates; the costal plate rugose; the under side of the lateral marginal plates with an indistinct squarish ring round the marginal band, on the suture of two neighbouring shields; legs olive-green, bandless; webs very large, scaly; claws elongate, subulate, nearly straight. "North America; Mississippi." Mr. Brandt's Collection. (Dec. 1855.)

31. Emys scabra (p. 31).

The colouring of the head of this species slightly varies. There are two living in the Zoological Gardens:—

1. The spot before the eyes and the streaks on the back of crown and nape broad and continuous.

2. The spot in front of the eyes very narrow, linear and transverse; the streak on the crown and nape narrow, interrupted in front so as to leave a spot in front of it, and with a small pair of narrow diverging streaks behind the others on the back of the neck. (Dec. 1855.)

2. Chrysemys Bellii (p. 33), *add*—

a. Adult (in spirits). Lateral angles of the vertebral plates central; back olive, speckled and vermiculated with black lines, with a short subsymmetrical black-edged pale line near the centre of each discal shield. Sternum black-varied. North America; Mississippi. Mr. Brandt's Collection.

"Emys marmorata, *Wagler.*"—*Brandt.*

b. Adult (in spirits). Like former, but sternal mark more indistinct. North America; Mississippi. Mr. Brandt's Collection.

"Emys Oregonensis, *Fitz.*"—*Brandt.*

3. Pseudemys serrata (p. 34).

Shell of live animal dark; the costal shields divided in half by a broad transverse red band, rest subannulated. Under side bright red, as figured by Holbrook. Very active and vicious. Zool. Gardens. (Dec. 1855.)

M. Leconte regards *Emys serrata*, Say, *E. rubriventris*, Leconte, *E. irrigata*, Duméril, and *E. rugosa*, Shaw, as synonyms of the same species, observing that it varies very much, but the essential character is the dentation of the jaws.

M. Leconte considers, certainly erroneously, *Emys ornata* and *E. annulifera* as synonyms of *E. hieroglyphica* of Holbrook.

1. Cistudo Carolina (p. 39).

M. Leconte erroneously considers the variety *C. Blandingii* of Holbrook as synonymous with *Lutremys Meleagris*, a European species.—*Journ. Acad. Philad.* vii. 189.

M. Leconte, not having seen *C. Mexicana*, refers it as a variety of *C. Carolina* with doubt.

14. KINOSTERNON (p. 43).

In the *Proceedings of the Academy of Natural Sciences of Philadelphia* for 1854, vol. iii. no. 5. p. 183, there is a paper by John Leconte, entitled "Descriptions of Four Species of *Kinosternon*," read on the 31st October 1854. The genus is divided into three groups, thus:—

I. Consisting of those with bivalve sterna; the valves joined to the abdominal piece by ligamentous hinges.

1. *K. longicaudatum*, Spix, Bras. 17. t. 12.

2. *K. scorpioides*. Surinam.

3. *K. Mexicanum*. Testa ovali, valde convexa, fusco-lutescente vel nigricante; dorso fortiter tricarinato, margine undique declivi, scutis vertebralibus secundo, tertio et quarto elongatis. Sterno utrinque rotundato, integerrimo; cauda unguiculata. Mexico.

4. *K. integrum*. Testa fusca, regulari, ovali, convexa, carinata, declivi, margine postice dispanso, lateral perpendiculari. Sterno magno, bivalvi, cistam omnino occludente, antice rotundato, postice paulo emarginato; cauda brevissima, mutica. Mexico.

5. *K. leucostomum*, Duméril, Mus. Acad.

II. Anterior valve of sternum joined to the abdominal portion by a ligament and partly by a suture, the posterior by suture only; wings tolerably long, with a deep divided groove on the anterior part.

6. *K. Pennsylvanicum*. From Canada to Florida.

7. *K. Sonoriense*. Testa modice convexa, postice latiore, antice et postice declivi, margine antice et postice dispanso, medio declivi, dorso indistincte tricarinato, carina intermedia vertebrali evidentiore; alarum canali leviter exarata, prope rudimentali; cauda unguiculata. Tucson in Sonora. The shell much less elevated than any other species.

III. Sternum narrow, subcruciform; valves joined to the abdominal portion of the chest by sutures, the lateral teeth of which are so large as to admit of but little motion, especially in the posterior one; wings long and narrow, without any groove on the inner part. Tail unarmed.

8. *K. odoratum*. From New York to Florida.

9. *K. guttatum*. Testa ovali, dorso subtricarinato, flavida fusco maculata, margine undique postice valde declivi, minime expanso. Sterno flavescente, angusto, antice truncato, postice late emarginato, femoribus et cruribus seriebus papillarum latere interiore echinatis; cauda mutica. Pennsylvania.

As I have not seen the species here described as new, I can give no opinion on their distinctness. *K. Pennsylvanicum*, from the description of the young, is evidently the species I have described under that name, but the other descriptions do not appear to be intended for the new species I have described; at least the characters on which I have founded the species are not observed.

K. guttatum, which is described as subcarinate, is evidently not the *Aromochelys carinatum* of this work.

M. Leconte considers *K. Doubledayii*, from the description given, to be a distinct species.

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